

Full Length Research Paper

Variables affecting social-emotional development, academic grit and subjective well-being of fourth-grade primary school students

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This study aims to examine the effects of some demographic variables on the social-emotional development, academic grit and subjective well-being of fourth-grade primary school students. The sample of this cross-sectional study consisted of 582 fourth grade primary school students. Data were collected using the Social-Emotional and Character Development Scale, the Academic Grit Scale, and the Subjective Well-Being in School Scale. It lasted around 30 min to answer the data collection tools. Data were analyzed using the SPSS 23 program. In this study, the levels of social-emotional development, academic grit and subjective well-being were higher in female students who received preschool education, and had a high frequency of daily book-reading. In addition, the multivariate main effects of students' gender, pre-school education and frequency of daily book-reading were significant. Relevant trainings can be organized in cooperation with universities and school counselling services to raise awareness of both teachers and families about daily book-reading. This can have an impact on students' academic grit, subjective well-being and social-emotional development.

Key words: Primary school students, social-emotional development, academic grit, subjective well-being.

INTRODUCTION

Advancing technology and differing living conditions can affect social relationships, individual learning, academic success and similar situations. What kind of features an individual should have in achieving success is among the topics still arousing interest of scholars. Depending on the changing trends across the world, social-emotional development in children has come to the fore along with social-emotional learning in education (Ji et al., 2013).

Since social-emotional development has a relationship with subjective well-being, pleasure of learning, motivation and similar variables, it is important to acquire these skills starting from preschool period (Kluczniok et al., 2016; The Centre for Adolescent Health, 2018). Relevant studies focused on the cognitive, academic and linguistic development of children, but did not give due consideration to their social-emotional competencies

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(Russell et al., 2016).

With the Industry 4.0 revolution, one of the most striking results of education 4.0 is that cognitive development is not solely sufficient in learning (Thomson et al., 2018; Turkish Industry and Business Association (TÜSİAD), 2019). To make the learning meaningful and become a product of life, several studies are conducted on the nature of learning, including social-emotional development (Ji et al., 2013), grit (Heckman and Rubinstein, 2001; O'Neal et al., 2019) and happiness (Askell-Williams et al., 2013). In addition, schools add grit-oriented assessments and practices to their curricula and courses (Hoerr, 2013). Thus, education authorities aim to raise happy individuals, managers, educators and employees who have strong communication skills, high emotional intelligence, perseverance, determination and responsibility, in business, education, society, that is, wherever there are humans (Ministry of National Education (MEB), 2018; TÜSİAD, 2019).

By declaring its education vision of 2023, MEB has stated that current system focuses on students' cognitive development only, neglecting other competences such as social-emotional development. As a solution to this problem, the 2023 Education Vision report emphasizes on the need for happy individuals equipped with social-emotional skills (MEB, 2018). A common feature of developed countries including Finland, Sweden and Norway is that individuals living in the country are happy (Helliwell et al., 2019). Education systems of such countries with high number and educated happy people pay attention to make students happy. In his book "Emotional Intelligence: Why It Can Matter More Than IQ?", Daniel Goleman states that intelligence is not a true linear explanatory of success, emphasizing on the necessity of social-emotional learning for success in students (Norris, 2003). These results suggest that education systems should focus on social-emotional development of students together with improving their non-intelligence skills such as attention, determination and responsibility (Karatay et al., 2015). Accordingly, students' social-emotional characteristics, perseverance and happiness should be evaluated together with their academic success as a whole. Students should be subjectively well, determined, faithful, decisive, and socially-emotionally developed, especially to make the learning a more enjoyable activity (Göçer, 2014; Katrancı, 2015; O'Neal et al., 2019).

Social-emotional development

Bandura states that social relations have an important place in the learning process of human being, a social entity. As children grow up and spend time at school, they are expected to develop positive relationships with their peers (Brown and Larson, 2009). In order to show these relationships, they should be socially-emotionally

developed. Social-emotional development is defined as developing positive relationships with others, acquiring knowledge, and being aware of and managing feelings (Ji et al., 2013; Zins et al., 2004). The importance of the question of "Why is social-emotional development important for children?" can be explained by the fact that development, which starts at an early age, shows its effects in the following periods of life, either positively or negatively. Studies have reported that children who show strong improvement in these areas of development, which should be taught both as a skill and a lesson, especially in early childhood and primary school can establish healthy relationships with their peers and parents, and have positive relationships, positive emotions and mental health, and thus show higher school performance (Durlak et al., 2011; Greenberg et al., 2003). Individuals who will need these skills, which do not only concern childhood and are also necessary in the following periods of life, should have a healthy social development to achieve academic success, attain high school performance, and have good family relations by gaining social competence (Yukay-Yüksel, 2009).

The acquisition of social-emotional skills in early ages is important, as social-emotional development is associated with cognitive and physical development, and is important in the formation of personality and character (Özdemir et al., 2012). Social-emotional development is affected by many factors, including heredity, parental attitude, environment, culture, sibling, peer relationships, teacher, effort, motivation, curiosity, empathy, care, responsibility, school commitment, improvement in grades, study habits, awareness of learning to learn, advanced reading skills, and literacy; and it may differ in life cycle (Belfield et al., 2015; Collaborative For Academic, Social, and Emotional Learning (CASEL), 2005; Elias and Mocerı, 2012; O'Neal et al., 2019; Zins et al., 2004, 2007). It is also important to examine the effect of demographic variables such as book-reading, gender and preschool education on social-emotional development in children as they affect reading skills.

Academic grit

Grit is defined as "determination to overcome obstacles" by the Türk Dil Kurumu (TDK) (2016). Relevant Turkish studies have used this word referring to resilience (Töremen and Demir, 2016) and persistence (Sarıçam et al., 2016; Telef, 2016). Contrary to some people's misconceptions that intelligence is the most effective predictor of success, Duckworth et al. (2007) state that grit should be accepted as an important predictor of success, by emphasizing that those showing higher grit (that is perseverance and passion for long-term goals) among students with same intelligence level are more successful. They also report that individuals with grit are

more likely to move towards success without deviating from their goals. Sariçam et al. (2016) state that grit is an important and necessary factor in achieving social-emotional development and succeeding in all other areas of life, and can be considered a social-emotional skill or moral value. Grit can be improved as it is related to development areas (Duckworth et al., 2007). Studies have reported that grit is associated with academic success (Bowman et al., 2015), self-efficacy, self-regulation, metacognition (Rojas et al., 2012; Wolters and Hussain, 2015), self-control (Duckworth et al., 2007), depression, anxiety and stress (Lee, 2017; Özhan and Boyacı, 2018).

Subjective well-being

Together with positive psychology, subjective well-being has become one of the primary subjects of researchers, as it positively affects quality of life and health (Askell-Williams et al., 2013; CASEL, 2005; World Health Organization (WHO), 2006; Huebner et al., 2006). In the literature, subjective well-being, also called hedonic well-being, hedonic happiness or state of happiness, refers to experiencing positive emotions frequently and seeing oneself as a happy individual by getting a high satisfaction from the life as a result of minimizing or eliminating negative emotions (Diener, 1984; Seligman, 2002). Subjective well-being consists of cognitive and emotional dimensions. The cognitive dimension is composed of a self-assessment of life satisfaction, and the emotional dimension is composed of a self-assessment of satisfaction consisting of positive- and negative emotions about oneself. There are family, environment and school and similar variables in the sub-dimensions of life satisfaction. School satisfaction explains subjective well-being in school (Diener and Suh, 1997; Haranin et al., 2007). Subjective well-being in school refers to the presence of a culture and an environment encouraging dynamic and top-level development for staff and students in a school. By focusing on coping with difficulties, healthy life development is important for providing a quality education and training centered upon cultural, academic, social, emotional, physical and technological development (Ireland Ministry of Education and Skills, 2015). As subjective well-being in school of primary school students increases, their school attachment and attendance also increase (Liu et al., 2015; Telef, 2016).

Emphasizing on subjective well-being in students and learning about the change of subjective well-being by demographic variables can provide important results. Studies of the European Union, Pew Research Center and the World Values Survey continue to draw attention to the importance of well-being (Diener and Seligman, 2004). In addition, PISA performs measurements on science, reading and mathematics, and also collects statistics on happiness (Organization for Economic

Co-operation and Development (OECD), 2019).

Study purpose and significance

MEB (2019) conducted a large-scale survey with fourth grade students, and reported that 40% of them had reading comprehension problems, and 60% could not use the number operations skills. These results suggest whether there is a relationship of preschool education, book-reading and gender with this problem. Besides cognitive development, it can also be asked whether affective characteristics have also an effect on this problem. Katrancı (2015) states that having a book shelf in home has significant effect on children are reading skills.

Until the beginning of the 21st century, schools have emphasized on students' cognitive development, neglecting their social-emotional development and subjective well-being (Thomson et al., 2018). Most of the studies on subjective well-being have targeted secondary school students, adolescents and adults (Baytemir, 2016; Erdem, 2018; Huebner et al., 2006), therefore there is a limited number of studies on subjective well-being in children (Telef, 2014). The number of studies on grit began to increase with Angela Lee Duckworth from 2007, but there is still a need for studies examining the change of grit skill in primary school students with respect to preschool education and book-reading. There are no studies examining the main effect of gender, pre-school education and frequency of daily book-reading on social-emotional development, academic grit, and subjective well-being in primary school students. The results of this study can guide national programs that will draw attention to the importance of preschool education and daily book-reading in social-emotional development, subjective well-being and academic grit of primary school students. Based on this reason, this study aims to examine the effects of gender, pre-school education and frequency of daily book-reading on social-emotional development, academic grit and subjective well-being in primary school fourth grade students. For this purpose, the following research questions were prepared:

- (i) Is there a difference between the social-emotional development, academic grit and subjective well-being mean scores of male and female students?
- (ii) Is there a difference between the social-emotional development, academic grit and subjective well-being mean scores of 4th grade students who have received pre-school education?
- (iii) Is there a difference between the social-emotional development, academic grit and subjective well-being mean scores of 4th grade students according to frequency of daily book-reading?
- (iv) Is there a difference between the social-emotional development, academic grit and subjective well-being

mean scores of 4th grade students, depending on the common effect of gender, pre-school education and frequency of daily book-reading?

METHODOLOGY

Sample

A cross-sectional research design was used in this study (Cohen et al., 2018). Its population consisted of 1928 fourth grade primary school students studying in the city center of Amasya in 2018-2019 academic year. The sample size was determined using the proportional cluster sampling method (Cohen et al., 2018). For this purpose, firstly, schools in the city center of Amasya were divided into three groups as city, town and village schools, and then the number of students to be reached for the sample was determined by considering the ratio of these schools in the population. A school in the city center was later added to the sample due to possible data losses and better representation of the population. The sample consisted of 582 primary school students, including 460 students (79%) from schools in the city center; 56 (10%) from those in towns, and 66 from those in villages. In addition, 311 (53.4%) of the students were males, and 271 were females (46.6%), whose age ranged between 9 and 11 years.

Data collection tools

Personal information form

This form was used to learn about the students' gender, age, pre-school education status and frequency of daily book-reading.

Subjective well-being in school scale

The scale, developed by Liu et al. (2015), was used to determine the subjective well-being levels of primary school students. Its Turkish validity and reliability study was conducted by Bozgün and Kösterelioğlu (2020). This is a five-point Likert type scale with 33 items, in which total scale score varies between 33 and 165. High scores indicate high subjective well-being levels. In this study, the Cronbach's alpha internal consistency coefficient of the scale was calculated as .90, indicating an excellent scale reliability (Yockey, 2011). An example item from the scale is "Our campus has a beautiful environment".

Social-emotional and character development scale

The SECDs, developed by Ji et al. (2013) and adapted into Turkish by Bozgün and Baytemir (2019), is used to measure students' social-emotional and character development. Although the original scale aims to measure both students' social-emotional and character development, only the social-emotional development subscale of the scale was used in this study as it aimed to measure students' social-emotional development. The social-emotional development subscale consists of 14 questions to determine the levels of positive social behavior, self-control, and self-development in students. This is a four-point Likert scale, scoring between "I totally disagree" and "I totally agree". Total scale score ranges between 14-56, where higher scores indicate higher social-emotional development. In this study, the Cronbach's alpha internal consistency coefficient of the scale was calculated as .79, which indicates a good scale reliability. An example item from the scale is "I try to cheer up other kids if they are feeling sad".

Academic grit scale

The scale was developed by Rojas et al. (2012) to determine students' academic grit levels, and its Turkish validity and reliability study was conducted by Bozgün and Başgöl (2018). Both the original scale and its Turkish version have a single-factor structure with 10 items. This is a four-point Likert scale, scoring between "I totally disagree" and "I totally agree". Total scale score ranges between 10-40, where higher scores indicate higher academic grit. In this study, the Cronbach's alpha internal consistency coefficient of the scale was calculated as .77, which indicates a good scale reliability. An example item from the scale is "I keep working at something new even when it's hard".

Research procedure

Data were collected between March-June 2019 by the researcher after obtaining the necessary permissions from the Amasya Provincial Directorate of National Education. Before data collection, students were informed about research ethics by explaining that participation in the study was voluntary, that their answers would be kept confidential and not be used for any purpose other than the purpose of the study, and that they could leave the study at any time without any sanction. Students filled out the data collection tools in approximately 30 min.

Data were analyzed using the SPSS [Statistical Package for the Social Sciences] version 23. Before data analysis, a preliminary analysis was performed to check data accuracy, missing data, outliers, and statistical assumptions (Tabachnick and Fidell, 2014). The minimum and maximum values and frequency distributions of each variable were examined to check the accuracy of the data. This analysis revealed that all variables were within the expected value ranges. The median value of Tabachnick and Fidell (2014) was assigned in the data set as the missing value was 5% or less. Descriptive statistics were used to give information about students' socio-demographic characteristics. One-way MANOVA [Multivariate Analyses of Variance] was performed to determine the differences between students' social-emotional development, academic grit and subjective well-being total mean scores. As the homogeneity of variance or covariance matrices was violated in some of the one-way MANOVA, Pillai's Trace was used to report the multivariate main effect, in accordance with the suggestions of Tabachnick and Fidell (2014). In addition, Games-Howell post hoc test was used when the assumption of homogeneity of variances was violated. Furthermore, the research results were examined using the Welch *t* test or the Welch *F* test, and the results similar to those in the one-way MANOVA were obtained. Therefore, the results of one-way MANOVA were reported in the study. In all statistical analyses, an error margin of .05 was accepted as the upper limit.

RESULTS

Table 1 presents descriptive statistics regarding the demographic characteristics of fourth grade primary school students. Accordingly, majority of the primary school fourth grade students were males, received pre-school education and had low frequency of daily book-reading. Table 2 presents the students' social-emotional development, academic grit, and subjective well-being total mean scores and standard deviation values. Table 3 presents the results of one-way MANOVA performed to examine the differences between students' social-emotional development, academic grit and subjective

Table 1. Statistics on students' demographic characteristics.

Variable	Subcategories	f	%
Gender	Male	311	53.4
	Female	271	46.6
Have you received pre-school education?	Yes	455	78.22
	No	127	21.8
Frequency of daily book-reading	None	69	11.9
	Low	282	48.5
	High	231	39.6

Table 2. Descriptive statistics on social-emotional development, academic grit, and subjective well-being.

Variable	Social-emotional development		Academic grit		Subjective well-being	
	M	SD	M	SD	M	SD
Gender						
Male	48.35 ^b	5.32	35.39 ^b	3.78	115.82 ^b	11.70
Female	50.43 ^a	4.49	36.55 ^a	3.63	118.82 ^a	10.42
Pre-school education						
Yes	49.58 ^a	4.86	35.96	3.83	117.64	11.41
No	48.38 ^b	5.62	35.83	3.44	117.10	10.50
Frequency of daily book-reading						
None	44.84 ^c	6.02	32.07 ^c	4.47	103.42 ^c	16.08
Low	48.79 ^b	4.60	35.59 ^b	3.50	116.92 ^b	9.00
High	51.30 ^a	4.20	37.51 ^a	2.73	121.70 ^a	8.04

There is a significant difference between the groups: a>b>c.

Table 3. Multivariate MANOVA results.

Variable	Pillai's Trace	dfn, dfd	F	p	Partial η^2
Gender	0.04	3, 578	80.73	0.001***	0.04
Pre-School Education	0.02	3, 578	40.81	0.003**	0.02
Frequency of Daily Book-Reading	0.28	6, 1156	310.49	0.001***	0.14

** $p < .01$; *** $p < .001$.

well-being total mean scores according to gender, pre-school education status and frequency of daily book-reading.

Accordingly, the multivariate main effects of gender ($F(3, 578) = 8.73$, $p < 0.001$, $\eta^2 = 0.04$), pre-school education ($F(3, 578) = 4.81$, $p < .01$, $\eta^2 = .02$), and frequency of daily book-reading ($F(6, 1156) = 31.49$, $p < .001$, $\eta^2 = 0.14$) were statistically significant. The multivariate main effect of gender and preschool

education had a low effect size, whereas the multivariable main effect of frequency of daily book-reading had a high level of effect size. A series of one-way analysis of variance (ANOVA) was performed to determine which dependent variables caused the difference. Table 4 presents the one-way ANOVA results.

Accordingly, there was a statistically significant difference between the students' social-emotional development ($F(1, 580) = 25.50$, $p < 0.001$, $\eta^2 = 0.04$),

Table 4. One way ANOVA results.

Variable	dfn, dfd	F	p	Partial η^2
Gender				
Social-emotional development	1, 580	25.50	0.001***	0.04
Academic grit	1, 580	14.21	0.001***	0.02
Subjective well-being	1, 580	10.51	0.001**	0.02
Pre-school education				
Social-emotional development	1, 580	5.66	0.018*	0.01
Academic grit	1, 580	0.13	0.718	0.00
Subjective well-being	1, 580	0.23	0.634	0.00
Frequency of daily book-reading				
Social-emotional development	2, 579	55.09	0.001***	0.16
Academic grit	2, 579	72.64	0.001***	0.20
Subjective well-being	2, 579	93.30	0.001***	0.24

** $p < .01$; *** $p < .001$; **** $p < 0.001$.

academic grit ($F(1, 580) = 14.21, p < 0.001, \eta^2 = 0.02$), and subjective well-being ($F(1, 580) = 10.51, p < 0.001, \eta^2 = .02$) total mean scores by gender; and between their social-emotional development ($F(1, 580) = 5.66, p < .05, \eta^2 = 0.01$) total mean scores by pre-school education; and also between their social-emotional development ($F(2, 579) = 55.09, p < 0.001, \eta^2 = 0.16$), academic grit ($F(2, 579) = 72.64, p < 0.001, \eta^2 = 0.20$), and subjective well-being ($F(2, 579) = 93.30, p < 0.001, \eta^2 = 0.24$) total mean scores by frequency of daily book-reading. Both the differences between students' social-emotional development, academic grit and subjective well-being total mean scores by gender, and those between their social-emotional development total mean scores by pre-school education had a low effect size. However, the differences between their social-emotional development, academic grit and subjective well-being total mean scores by frequency of daily book-reading had a high effect size. As seen in Table 2, female students had significantly higher social-emotional development, academic grit and subjective well-being total mean scores than male students. In addition, those who received preschool education had significantly higher social-emotional development total mean score than those who did not receive preschool education. In addition, the Games-Howell post hoc tests revealed that students with high frequency of daily book-reading had significantly higher social-emotional development, academic grit, and subjective well-being total mean scores than both those with low frequency of daily book-reading and those who did not read any books at all. Furthermore, students with low frequency of daily book-reading had significantly higher social-emotional development, academic grit and subjective well-being total mean scores than those who did not read any books at all.

DISCUSSION

This study examined the effects of gender, pre-school education and frequency of daily book-reading on social-emotional development, academic grit and subjective well-being in primary school fourth grade students. According to the first subproblem of the study, there was a significant difference in favor of girls in terms of social-emotional development, subjective well-being and academic grit of primary school students. In the literature, there are studies consistent with this result. Kluczniok et al. (2016) obtained research results similar to those in this study by determining that female students have higher social-emotional development, subjective well-being and willingness to learn than male students. Studies have reported that females have higher grit (Duckworth et al., 2007; Rojas et al., 2012), social-emotional development (Erdem, 2018; Ji et al., 2013) and subjective well-being (Kluczniok et al., 2016) than boys. However, Baytemir (2016) have determined that male students differ from girls in terms of social competence and subjective well-being. There are also studies suggesting no significant difference between students' grit (Duckworth and Quinn, 2009) and subjective well-being (Erdem, 2018; Huebner et al., 2006) by gender. Based on the results of this study, the fact that girls are more socially and emotionally developed and have higher subjective well-being than boys can be explained by the fact that as women find better places in society, work in more skilled jobs and enjoy higher number of equal rights with men by each passing day, parents raise their daughters with this awareness. In addition, girls have faster biological development than boys; therefore they may have higher social-emotional development and act more maturely in initiating relationships. Primary

education is a period children start to form groups with their fellow peers, therefore they may feel compelled to be successful.

According to the second subproblem of the study, students who received preschool education had higher social-emotional development, academic grit and subjective well-being than those who did not. Russell et al. (2016) state that preschool education has an important effect on task completion, one of the indicators of social development and grit in primary school children. Kohn and Rosman (1972) report that students with preschool education are more curious and better reflect the indicators of social-emotional development. In contrast to these results, Öztürk (2008) found that preschool education had no effect on social skills. In the literature, there are studies suggesting that preschool education affects social-emotional development. Because, social-emotional development proceeds rapidly in preschool period compared to other periods. When they are socially and emotionally developed, primary school students with preschool education can develop high level of subjective well-being and grit, which are associated with social-emotional development (Banerjee et al., 2016; Mayr and Ulich, 2009).

According to the third subproblem of the study, students with a high frequency of daily book-reading had higher social-emotional development, academic grit and subjective well-being than those with low frequency of daily book-reading and those who never read books. Similarly, students with low frequency of daily book-reading had higher social-emotional development, academic grit and subjective well-being than those who never read books. Consistent with these results, Anderson (2017) states that the happiness of primary school students who read and understand what they read increases. There are studies suggesting that reading habit decreases after the 2nd and 3rd grades of primary school (Kurnaz and Yıldız, 2015; Yıldız and Kaman, 2016), which suggests that students should gain reading habit in primary school period and continue it with determination. By declaring a need to raise socially and emotionally developed students in its 2023 educational vision and establishing its philosophy as growing happy children, MEB emphasizes in its large-scale study on primary school fourth grade students that the lack of reading comprehension in 40% of students points out the necessity to encourage students to have an awareness of grit skill for gaining reading habits (MEB, 2019). Many schools have recently integrated grit-based assessments and practices into their curriculum and classroom environment, which also emphasizes on the same necessity (Hoerr, 2013).

According to the last subproblem of the study, the variables of gender, pre-school education and frequency of daily book-reading have a joint impact on social-emotional development, academic grit and subjective well-being in primary school students. In this context, relevant authorities should pay more attention to

preschool education and reading in order to educate students who are socially-emotionally developed, academically determined and have high subjective well-being. Because students who read books and receive preschool education are more determined and happier and have more developed social-emotional skills. In line with this result, it can be concluded that happy students with high social-emotional development are more willing to read books. In addition, the contribution of preschool education to social-emotional development of children has been proven once again with this study. The Centre for Adolescent Health (2018) has emphasized on pre-school education as an investment in all areas of development in the following periods of a child's life. Preschool education contributes to the developmental characteristics of children aged 5-6 years, one of the important periods of social-emotional development. Further studies should request the higher values of female students than male students and the low levels of male students. Reading books is important in terms of not only learning but also being a means of understanding emotions and developing imagination.

The results obtained are due diligence; therefore, the effects of preschool education, whose impact on social-emotional development, academic grit and subjective well-being in primary school students was determined in this study, on reading motivation, reading comprehension and writing skills in children receiving preschool education can be examined in future studies. Informative activities can be conducted for families to ensure that students receive pre-school education. Relevant trainings can be organized in cooperation with universities and school counselling services to raise awareness of both teachers and families about daily book-reading, which has an impact on students' academic grit, subjective well-being and social-emotional development. To increase the reading levels of children, parents must be model to their children on reading and in every home there must be a bookshelf. Although the study group of this study is described as primary school students, the study is limited to fourth grade students. As subjective well-being and social-emotional development vary by age, further studies can examine these variables in different age groups without being limited to primary school students.

CONFLICT OF INTERESTS

The authors have not declared any conflict of interests.

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