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Examination of the Relationship Between Giftedness and ADHD Symptoms During Educational Processes

Aida Sahmurova^{a*}, Okan University, Istanbul, 34959, Turkey

Ugur Aylak^b, Uskudar University, Istanbul, 34662, Turkey

Hesna Bedirhanbeyoglu^c, Okan University, Istanbul, 34959, Turkey

Isil Okan Gulen^d, Okan University, Istanbul, 34959, Turkey

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Abstract

When compared to their peers, gifted children have more advanced skills in terms of intelligence, creativity, and leadership. Those gifted children need to be supported by special programs that will improve their skills. When the relevant literature is analyzed, it is seen that several symptoms of gifted children are also the symptoms of the children who have Attention Deficit Disorder with Hyperactivity (ADHD). Thus, the possibility of occurrence of confusion between these two during the diagnosis is indicated. Still, there are some findings which show that a child who has ADHD can be a gifted child; and yet children having ADHD would not use their talents in an efficient way. For this reason, they need to be supported with special services. From this standpoint, the aim of this study is to determine the gifted students and revealing the relation between mentioned talents and ADHD. In connection with this, during the research on high school students, The Multiple Intelligences Developmental Assessment Scale is used for determination of the superior talents; and to determine whether the students have any symptoms of ADHD or not Wender Utah Rating Scale is used. The data collected from the analysis suggested that there is a connection between mathematical intelligence and ADHD symptoms.

Keywords: Gifted Children, ADHD, Education, Mathematical Intelligence, Multiple Intelligence

* ADDRESS FOR CORRESPONDENCE: **Aida Sahmurova**, Okan University, Istanbul, 34959, Turkey
E-mail address: aida.sahmurova@okan.edu.tr / Tel.: +0-216-6771630

1.Introduction

Talent, in a broad sense, is the ability to understand and do something (Ucar, 2015). Gardner (1999), the founder of Multiple Intelligence Theory, stated that the fact that the human has talents in a wide range of areas and a person is good at one area does not necessarily mean that the person will be talented in other areas too. For example, a person may not be able to find direction in an environment unfamiliar to him/her or he/she may be unable to learn a new song while he/she is good at learning foreign languages. On the other hand, if a person is unqualified in learning a new language that does not mean he/she will be bad at other cognitive tasks as well. In this sense, when looked at the definition of giftedness, the children who possess superior talents, compared to their peers, are called gifted (Hallahan & Kauffman, 1988) According to Wechsler (1944), giftedness is the capacity to be able to move in the way that serves one's purpose, to have rational thought and to cope with her/his current environment in an efficient way. Renzulli (1977), also, refers to the necessity of three structures while explaining the giftedness. Those are having general and special talents above the average, high sense of duty and high creativity level. According to the instructions of Science and Art Centers (BILSEM), which are the institutions in our country that provide special and gifted students with special out-of-school programs aiming at improving the quality of their education, gifted child is the one who learns sooner and performs higher when compared to his/her peers and has abstract thinking skills and special skills in areas like creativity, art and leadership (MEB, 2007).

While gifted children have many positive characteristics such as fast learning, having a rich imagination, abstract thinking and problem solving, they also have some characteristics that can be considered negative such as a dislike for routine tasks, difficulty in focusing on the lesson and adapting to classmates. Those characteristics are not similar among all of the gifted children and they may vary from one child to another (Bates & Munday, 2005; Gur, 2011; Ucar, 2015). This being the case, there are many studies indicating that it may sometimes be hard to make a distinctive diagnosis between gifted students and students having symptoms of special learning disability or Attention Deficit Disorder with Hyperactivity (ADHD). Still, a child may both be a gifted individual and have symptoms of ADHD (Krochak & Ryan, 2007; Lovecky, 1999; Zorlu, Kahraman & Tanrikulu, 2016).

Attention Deficit Disorder with Hyperactivity (ADHD) is a neuropsychiatric disorder starting from the childhood with the emerging symptoms like attention deficiency, impulsivity and hyperactivity (Tuglu & Ozturk-Sahin, 2010). Unwillingness for doing homework, not being able to finish the work started, losing their possessions and concentration problems are some of the problems observed in the children showing ADHD symptoms (Yavuzer, 2012). Analysis of literature related to children diagnosed with ADHD suggests that there are studies showing that those children gain less success than their peers in terms of academic and social skills and that the teachers evaluate their performance level as low and they are likely to fail many lessons (Chan, Guo, Zou & Yang, 2006; Kent et al. 2011; Re, Lovero, Cornoldi & Passolunghi, 2016). Especially when their mathematical success is concerned, it is concluded that their problem solving and calculation skills are lower than their peers who do not show ADHD symptoms (Lucangeli & Cabrele, 2006; Zentall, Smith, Lee & Wieczorek, 1994).

2.Method

A total number of 37 high school students, from both 3rd and 4th grades of Okan College, participated in this research. Wender Utah Rating Scale (WURS) and The Multiple Intelligences Developmental Assessment Scale were administered to the students.

2.1. Wender Utah Rating Scale (WURS)

It has been developed by Ward et al. in 1993 with the aim of getting information about whether ADHD symptoms exist in adults or not. The scale, initially evaluating ADHD symptoms with 61 items, was shortened to the version including 25 items which were considered as effective in distinguishing between ADHD patients and the control group. It is a five-score Likert scale depending on individuals' self-reports. Validity and reliability study was carried out for the scale, and the calculated internal reliability co-efficient was found to be .93 for the total score. The cut off score for the determination of ADHD symptoms is considered 36 and above (Oncu, Olmez & Senturk, 2005).

2.2. The Multiple Intelligences Developmental Assessment Scale

Based on Gardner's Multiple Intelligence Areas Classification, The Multiple Intelligences Developmental Assessment Scale was developed by Gulsen (2015) for the determination of eight intelligence areas. Consisting of 80 questions, the Cronbach's alpha coefficient for the scale was found to be .96. Three sub items of this scale, namely Naturalistic Intelligence; Visual and Spatial Intelligence; and Mathematical Intelligence parts were used in the research.

SPSS (Statistical package for social sciences) program has been used to evaluate data and the analysis of the data were made by use of independent samples t-test and correlation analysis. Through the correlation analysis of the scores obtained from the scales, ADHD was compared with Naturalistic Intelligence; Visual and Spatial Intelligence; and Mathematical Intelligence. Also, the scores obtained from the Wender Utah Rating Scale (WURS) and the scores obtained from The Multiple Intelligences Developmental Assessment Scale were analyzed through a t-test to determine whether there is a significant difference between the scores in terms of gender. The research was conducted in 2016-2017 with the approval of Okan College administrators and ethical committee.

3. Result

Twenty-one male and sixteen female students participated in the research. All of the 37 participants were studying in Okan College. The correlation between Mathematical Intelligence and Wender Utah Rating Scale is given in Table 1.

Table 1. The correlation between Mathematical Intelligence and Wender Utah Scores

Variable	N	R	P
ADHD Mathematical Intelligence	37	-,426*	,009

*p < .01

According to the data shown in Table 1, a significant negative correlation between the Wender Utah scores and the Mathematical Intelligence scores was found ($r=-,426$, $p<.01$).

Table 2. The correlation between Visual and Spatial Intelligence scores and Wender Utah Rating Scale Scores

Variable	N	R	P
ADHD Visual and Spatial Intelligence	37	-,173	,305

According to the data shown in Table 2, a significant correlation between the Wender Utah Rating Scale scores and the Visual and Spatial Intelligence scores was not found.

Table 3. The relationship between Naturalistic Intelligence Scores and Wender Utah Rating Scale Scores

Variable	N	R	P
ADHD Naturalistic Intelligence	37	-,006	,970

According to the data shown in Table 3, a significant correlation between the Wender Utah Rating Scale scores and the Naturalistic Intelligence scores was not found.

The research, also, showed that 21 students' visual and spatial intelligence; 19 students' logical and mathematical intelligence and 19 students' naturalistic intelligence were advanced. The results show that individuals may have high intelligence scores in the intelligence areas other than mathematical and logical intelligence despite having high ADHD scores.

In the gender based analysis of the Wender Utah Rating score averages; a significant difference was not found in terms of ADHD scores between males and females [$t_{(35)} = -0,385$, $p > .05$]. When mathematical intelligence points of males and females are compared, a significant difference was not found between groups [$t_{(35)} = 0.786$, $p > .05$]. When visual and spatial intelligence scores are compared, a significant difference was not found between groups [$t_{(35)} = -1.005$, $p > .05$]. A significant difference was not found between the groups in terms of naturalistic intelligence, either [$t_{(35)} = -1.816$, $p > .05$]. A significant relationship was not found between ADHD scores and visual and spatial intelligence scores [$r = -.17$, $p > .05$]. A significant negative relationship was found between ADHD and mathematical intelligence [$r = -.426$, $p < .05$]. A significant relationship between ADHD and naturalistic intelligence was not found [$r = .006$, $p > .05$].

4. Discussion

As can be seen from the literature, gifted children have some common characteristics. The literature also suggests that those characteristics are not similar among all gifted children; they may change from one to another and that does not mean the children can be good at every area (Bates & Munday, 2005; Gardner, 1999; Gur, 2011; Ucar, 2015). In addition to this, a child may both be a gifted individual and have ADHD symptoms at the same time. The children who show ADHD symptoms may, as well, get high scores from intelligence tests. They may answer the more complicated and difficult questions correctly, despite not being able to answer easy questions. Some studies also inform that the students who are skilled in mathematics can get high marks from the tests that are hard to solve (Chan et al., 2006). In some cases, students' giftedness is mistaken for ADHD symptoms. It is known

that, some difficulties are being experienced sometimes when attempting to make a distinguishing diagnosis between the two.

By taking previous studies into account, in this current study conducted in Okan College by us, multiple intelligence tests were administered to students who were considered to have ADHD and analysis was carried out to determine which intelligence types were dominant among those students.

5. Recommendations

1. Some parents ignore that their children have ADHD thinking that they are gifted. This situation results in children being directed to areas in which they are not talented. This, consequently, blocks the areas which the children are really good at. Therefore, guidance and counselling services should provide parents with training on those issues.
2. If it is suspected that a child has ADHD, the educational institution the child is studying at should cooperate with health institution. In this sense, it is suggested that the students be supported through education programs specially designed for them.
3. For the identification of dominant intelligence areas the students with ADHD develop, it is necessary to help reveal their intelligence areas by giving them the chance to express themselves throughout the education process. Such approaches will help to improve the quality of education.
4. Because the study was conducted in Okan College, it includes only this specific educational institution. It might further contribute to the education process if the experience can be expanded to all schools in the course of time.

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