

The relationship between hyperactivity dyslexia disorder and emotional intelligence and success

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Abstract

Hyperactivity and dyslexia disorder, which was discovered at beginning of the the twentieth century, also affects academic life negatively. In this study, the relationship between hyperactivity/dyslexia disorder and emotional intelligence and success has been analysed. In this study, the first-year students of primary schools in the Istanbul Florya school district, who are diagnosed as dyslexic and hyperactive, were purposefully sampled the research. In total, 70 students were involved. The results of the study showed that academic success level of the dyslexic and hyperactive students is low. Yet, there is not any success level difference among dyslexic and hyperactive students themselves. Moreover, positive relationship between hyperactivity and emotional intelligence was found.

Keywords dyslexia disorder, hyperactivity, emotional intelligence

Introduction

The study on soldiers suffering brain damage in 1920s (prewar and postwar) contributed the discovery of minimal brain damage concept. The usage of this concept for children having learning disabilities was arised thanks to Alfred Straus and his coworkers' studies and education programmes. It was determined in the researches conducted by Straus and Werner that the school-age children suffering minimal brain problem (not the ones suffering mental deficiency) have problems in reasoning, perceptual and emotional behaviors. These problems are congenital dyslexia and minimal brain damage. Along with perceptual motor skills and psycholinguistic problems, hyperactivity was also monitored in these children. (Doris, 1993).

The studies conducted in ensuing years affirm the results of Straus' research. Clements(1966) indited that a bunch of experts doing studies in this issue identified characteristics of students, who have medium-level intelligence score and having some problems in learning at school, as hyperactivity, perceptual motor skills disorder, neuroticism, lack of general coordination, attention deficit disorder, thought and memory disorder, learning disabilities in some subjects (reading, writing, spelling and mathematics), hearing disorder, neurological findings, brain electroencephalography (EEG). He categorized these characteristics in four groups; learning disability, hyperactivity, social and emotional problems, insufficiency of speech and hearing (Akt, Murphy & Stewart, 1991).

MBD is an abbreviation of Minimal Brain Disfunction that is used to define children who have slight congenital motor-coordination defect or have maturation lag in motor-skill systems. These children who do not have mental deficiency are clumsy,

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The relationship between hyperactivity dyslexia disorder and emotional intelligence and success

B. Odabaşı

lubber, hyperactive and suffer attention-deficiency (Madi. 1989:51). Mothers name these children as "being too naughty". They also recall that these children were snappy and restless during their babyhood. (Yörükoğlu,1983:265). As everyone of us can guess, the underlying reason of the studies in these issues are the conflict between the teen that want to be self-direct and parents who want to retain the authority and control (Aydın ve Ercan,1999:165-166).

Goodman and Poillion (1992) analysed 48 books and articles about the reasons and characteristics of attention-deficiency-disorder. Then, they asked expert opinion about the characteristics of attention-deficit-disordered people and the reasons causing this complication. They found that 48% of the experts thought the reason is genetic and 36% of them argued that the reason is the prenatal and postnatal factors. These factors were listed as neurologic growth deficiency, abnormality of brain, biochemical structure, nutritional habit, low birth weight, growth deficiency and psychosocial relations. According to Wong (1992), monitoring ADHD (attention deficit disorder with hyperactivity) more frequent in dizygotic twins than monozygotic twins strengthens the idea that defends the biological reason causing this deficiency. Neurologic abnormalities (brain damage and failure in neurotransmitters) causes attention deficit.

There is also a relationship between hyperactivity and learning disabilities (akt. Şenel,1996:84). Although attention deficit disorder with hyperactivity (ADHD) shows similarity with learning disability in some subjects (language and mathematics) they are quite different from each other and they are two different cases that must be analysed separately. Thus, it can only be possible to establish appropriate programmes by defining their rights in the special education legislation, to educate teachers, to make appropriate decisions about these children both in education division and school by distinguishing this definition difference between two cases (Murphy& Stewart,1991)."

Wong (1991) stated the idea propounding that learning disability is caused by attention deficit is gaining strength increasingly. According to Bruck learning disability and ADHB are concepts that are one within the other. For this reason, children having learning disability have social and emotional problems caused by hyperactivity (Margalit & Almougy, 1991). Margalit and Almougy (1991) stated that the number of people having these two problems at the same time is not so much, about 30% to 40% of the people that have learning disability also have hyperactivity problem (Şenel,1996:276). According to Selver (1992) only 20% of the group that have learning disability suffers ADHD, but Wong thinks that this ratio is 30% and 40%. Bingöl defends that not all the cases are caused by brain damage they are functional disorders at minimal level. Bingöl approaches dyslexia from different point of view by saying it is not related to mental deficiency on the contrary these children are pretty normal in terms of high cortical functions, they are even smart but they have deficiency in reading (e.g. reading from right to left, misspelling, not

understanding what they are reading) and writing (e.g. miswriting, changing the letter positions, writing like a reflection in a mirror).

The ratio of dyslexia at early age varies in different societies. Generally, the intensive dyslexia ratio in school-age children is 3-6%, when moderate dyslexia is included this ratio raises up to 10% and the ratio can be 15-17% for the sample in some researches (1,3). In total 72% of the subjects have reading problems in lessons. While the ratio is 90% among second-grade students, it is 60% in fourth-grade students. The number of male students having reading problem is statistically higher than the female ones (Bingöl, 2003:67-82).

The first diagnose of learning disability are listening, reasoning, speaking, reading, punctuation and calculation disabilities in one or more educational phases. The students having these disabilities display disfunctioning in certain subjects (reading, writing, arithmetic and spelling) (Wong, 1991).

The DSM IV defines learning disability as the performance of the child in reading, mathematics or writing test is lower than the expected level for his age, school and intelligence level. His learning disability problems have negative effects on his daily life routines that require academic success, reading, writing or maths skills'' (DSM IV, 1994:46). Hyperactive students got a bit lower scores in intelligence tests than the normal control group (Haris 1994:6).

The importance of concentration in effective and permanent learning is crucial. because the first step in learning is paying attention. But we have weak concentration ability. We get tired easily. This situation is more valid especially among young students. Young students can keep their attention for very short period of time '' (Senemoğlu, 1997).

Hyperactivity and learning disability are monitored more often among boys than girls. While the learning disability is between %2 and %10 among school-age children, this ratio is %3 and %5 among the same age students suffering ADHB. Male students hold higher statistic with the ratio of %60- %80 learning disability and %75- %90 ADHB (DSM IV, 1994). According the information that Lerner (1993) got from American Education Administration %72 of students having learning disability is male and %28 of them is female. This disability in children is diagnosed at birth, at 3-4 age or at school-age. When they get older, the activity they do become less and they have more tough responsibilities and this manner make life hard for them (Silver, 1992).

During the childhood period that can be extend until the adolescence, hyperactivity can be observed as a permanent or temporary characteristic. MBD (Minimal Brain Disfunction) that has organic bases has distinctive and special role in this adaptation period (Aydoğmuş, 1984:514). Silver (1992) indicated that %50 of the children having ADHB get rid of their disabilities before puberty period, %25 of children get over their disabilities in adolescence and %25 of them still have the disabilities in adulthood. The learning disability problem is not just limited to primary school-age, it

The relationship between hyperactivity dyslexia disorder and emotional intelligence and success

B. Odabaşı

can effect their life in social meetings, in every sort of activities, during higher life of education (high school, university etc.) and work life (Silver, 1992; Lerner, 1993).

The medication does not make the patient addict but it may cause some adverse effect (headache, insomnia, depression, loss of appetite etc.). The medication can not be the only treatment way for hyperactive child. While the child is consulted to control his behaviors, the treatment means in cooperation between teachers, consultant and parents are also pretty important (Yazgan, 1998). Neither doctors nor parents/teachers can help hyperactive child alone in diagnosis phase, treatment programme planning or during the treatment. Diagnosing and treating the child requires team work (Madi, 1989).

Method

Descriptive method was used in this study. Descriptive model is used to research the main features of a collection of data. The population is identified at the beginning of the study conducted with descriptive model. The data of descriptive research is analysed by using descriptive statistics (sample, frequency, percentage, etc.) (Bir et al., 1997).

Description is the first element in every sort of science. It's purpose is to identify, classify and record the study concepts and relationship between these concepts. (Yıldırım, 2000: 56). This kind of study seeks to identify current situations, conditions and features in bare facts. This is also called as 'screening model'. It contains process such as interpretations based on data analysis and definition, evaluation and generalization for new situations (Aslantürk, 1999). Getting true information and making correct decision are essential in scientific researches. For this reason, this method requires correct information and generalization of information. (Arıkan, 1994). More than adequate information causes economic loss and insufficient information fails the objective of the study. (Özçelik, 1981:74).

It is impossible to include all population into the study. Thus, by sampling from entire target population it is aimed to have a sample population that can represent everyone. So a wide range of information can be collected from a few people that represent the entire target population. The sample should be the best selection that can represent the problem of the population (Sencer, 1989:386).

In this study, hyperactive and dyslectic students of an elementary school in (6, 7 and 8 grades) İstanbul Küçükçekmece Florya school district were taken as sample. The 34 students of the 70 sample were hyperactive and 36 of them were dyslectic.

The statistical analysis of the data

In the comparison of quantitative data, in order to identify the differences between two groups t-test was used and for more than two groups one way anova test was used to compare parameters between groups. Chi-squared test was used for multigroup variables. The findings out of the study are interpreted in 95% confidence interval and 5% level of significance.

Findings and interpretations

The distribution of sample group’s frontal structure is illustrated in Table 1. According to the table, 17 (24.3%) of participants have mathematical-analytic intelligence and 53 (75.7%) of the participants have verbal-emotional intelligence.

Table 1 Frontal Relation

| | Number of students | Percentage (%) |
|-----------------------|--------------------|----------------|
| Mathematical-analytic | 17 | 24.3 |
| Verbal-emotional | 53 | 75.7 |

Table 2 Dyslexia/Hyperactivity

| | Number of students | Percentage (%) |
|---------------|--------------------|----------------|
| Hyperactivity | 34 | 48,6 |
| Dyslexia | 36 | 51,4 |

The Dyslexia/Hyperactivity distribution of sample group (diagnosed) is shown in Table.2. According to this table, 34 (48,6%) of the participants are hyperactive and 36 (51,4%) of them are dislectic.

Table 3 Success average of the group

| | N | Avg.. | S.d. | Min. | Max. |
|---------|----|-------|------|-------|-------|
| Success | 70 | 66.40 | 8.66 | 45.36 | 82.05 |

Success Average is calculated as 66,408 ± 8,660.

From table 4, it can be seen that 2 (5.9%) of participants having bad writing and drawing have verbal analytic frontal, 23 (67.6%) of them have verbal emotional frontal, 1 (2.9%) of them has mathematical analytic frontal, 8 (23.5%) of them have mathematical emotional frontal. The table also shows that 7 (19.4%) of the participants having good drawing have verbal analytic frontal, 11 (30.6%) of them have verbal emotional frontal, 7 (19.4%) of them have mathematical analytic frontal, 11 (30.6%) of them have mathematical emotional frontal.

Table 4 Frontal Drawing Relation

| Frontal Relation | Drawing and Writing Test | | | | Total | X ² | S D | p |
|------------------------|--------------------------|---------|------|---------|-------|----------------|--------|-------|
| | Bad | Percent | Good | Percent | | | | |
| Verbal analytic | 2 | 5.9 | 7 | 19.4 | 9 | 11.939 | 3 | 0.008 |
| Mathematical analytic | 1 | 2.9 | 7 | 19.4 | 8 | | | |
| Verbal emotional | 23 | 67.6 | 11 | 30.6 | 34 | | | |
| Mathematical emotional | 8 | 23.5 | 11 | 30.6 | 19 | | | |
| Total | 34 | 100.0 | 36 | 100.0 | 70 | | | |

The relationship between hyperactivity dyslexia disorder and emotional intelligence and success

B. Odabaşı

Table 4 also shows the results of the chi-square test indicating that there is a meaningful relationship between drawing and frontal, ($X^2=11.939$; $p=0.008<0.05$). In general, all of the participants having emotional intelligence and in specific participants having verbal emotional intelligence have drawn triangle, tree and star bad.

Table 5 The relationship between dyslexia/hyperactivity and emotional intelligence

| Frontal Relation | Dyslexia/Hyperactivity and Emotional Intelligence | | | | Total | X ² | SD | p |
|------------------------|---|---------|----------|---------|-------|----------------|----|-------|
| | Hyperactivity | Percent | Dyslexia | Percent | | | | |
| Verbal analytic | 3 | 8.8 | 6 | 16.7 | 9 | 4.262 | 3 | 0.235 |
| Mathematical analytic | 17 | 50.0 | 17 | 47.2 | 8 | | | |
| Verbal emotional | 2 | 5.9 | 6 | 16.7 | 34 | | | |
| Mathematical emotional | 12 | 35.3 | 7 | 19.4 | 19 | | | |
| Total | 34 | 100 | 36 | 100 | 70 | | | |

The dyslexia/hyperactivity and emotional intelligence distribution of sample group (diagnosed) is shown in Table 5. From the table, it can be seen that 3 (8.8%) of hyperactives have verbal analytic frontal, 17 (50.0%) of them have verbal emotional frontal, 2 (5.9%) of them have mathematical analytic frontal, 12 (35.3%) of them have mathematical emotional frontal. Also from the table, it can be seen 6 (16.7%) of the dislectics have verbal analytic frontal, 17 (47.2%) of them have verbal emotional frontal, 6 (16.7%) of them have mathematical analytic frontal, 7 (19.4%) of them have mathematical emotional frontal.

Table 5 also shows the results of the chi-square test for the relationship between dyslexia/hyperactivity and emotional intelligence. The results show that there is not any significant relationship between Dyslexia/Hyperactivity and frontal dominance. ($X^2=4.262$; $p=0.235>0.05$).

Table 6 The distribution of success related to frontal relation

| | Group | N | Avg | SD | F | p |
|---------|------------------------|----|------|-----|-------|-------|
| Success | Verbal analytic | 9 | 65.6 | 7.5 | 0.180 | 0.910 |
| | Verbal emotional | 34 | 65.8 | 8.7 | | |
| | Mathematical analytic | 8 | 66.6 | 9.4 | | |
| | Mathematical emotional | 19 | 67.5 | 9.1 | | |

As a result of the one-way variance analysis (ANOVA) conducted to see if success average shows significant difference in frontal relation variable (see Table 6), the difference between groups' average was found not to be statistically significant. ($F=0.180$; $p=0,910>0.05$).

Table 7 The distribution of success related to dyslexia/hyperactivity

| | Grup | N | Avg | SD | t | p |
|---------|---------------|----|--------|-------|-------|-------|
| Success | Hyperactivity | 34 | 68,235 | 9,439 | 1,740 | 0,086 |
| | Dyslexia | 36 | 64,683 | 7,585 | | |

As a result of the t-test that was done to understand if the success average shows significant difference in dyslexia/hyperactivity variable (see Table 7), the difference between groups' average was found not to be statistically significant ($t=1,740$; $p=0,086>0,05$).

Conclusion and Discussion

The distribution of sample group's frontal structure is analysed in the Table 1. According to this table, 17 (24.3%) of participants have mathematical-analytic intelligence and 53 (75.7%) of the participants have verbal-emotional intelligence. Thus, we say that there is relation between having right frontal dominance / emotional intelligence and hyperactivity. In Table 5, although there is not any relationship between hyperactivity/dyslexia and frontal structure, there is a relationship between hyperactivity and emotional intelligence. This findings support the claims of Bingöl and other researchers. Bingöl states that there is not any relationship between dyslexia and intelligence. In our study, although we did not find any relation between dyslexia and frontal, we found relationship between hyperactivity and right frontal-emotional dominance. There is link between human's emotional mood and his activity. People acting emotional and verbal give sudden decisions and are more snappy. Şimşek also mentions the relation between being out-going and movement intelligence. He says that these individuals have advance communication skills and they are participative rather than individualist. (Şimşek, 2004) and Sürekli has done a study about "the relation between different variables and half hemisphere choice". 107 students of labor economics, electronic and textile teacher departments participated in the study between 1999 and 2003. The choice of right cerebral hemisphere and being out-going have strong relationship but the choice of left cerebral hemisphere and being introverted have positive relation. The reverse relations show negative relations. It was observed that there was not any link between students who make decisions originated to right hemisphere and an external control mechanism (Sürekli, 2004: 95-102). Odabaşı (2010) also has similar findings.

Left frontal structure makes people introverted and the right frontal makes them out-going and snappy. Thus, it is quite normal that movement and right frontal have direct relation. New studies on this matter are needed.

As it can be understood from Table 4 there is a relationship between frontal structure dominance and drawing. Students who have verbal-emotional intelligence have bad drawings. Odabaşı ascertains positive relationship between left frontal and individuals showing steady and systematic attitude in the studies of Sürekli and Rooney (Odabaşı, 2010; Sürekli, 2004; Rooney, 1991). While people that use their left frontal have tendency to work and live by sticking to technique, plan and order, people using their

The relationship between hyperactivity dyslexia disorder and emotional intelligence and success

B. Odabaşı

right frontal are more emotional and untidy. Thus, the people that have right frontal dominance can be creative, expansionist and untidy.

As it is illustrated in Table 6 and 7, there is not any relationship between frontal dominance variables and success among hyperactives and dyslectic. The success average of two groups is pretty close to each other and the success level does not change according to frontal dominance.

As conclusion, hyperactive and dyslectic students should be diagnosed at very early phase and they should be settled in learning environment by enhancing their academic success. For this reason, early diagnosis and precautionary service should be added in our educational system and concerns about this issue should be increased. Yet, in our National Educational System, we do not have descriptive methods/systems and precautionary service.

Prospective teacher should have precautionary service courses in their pedagogical formation programmes. Lessons --in the curriculum of Faculty of Education--teaching prospective teachers how to realize this sort of disorders can make the system functional and flexible. The early diagnosis process can provide an important advancement to control this kind of disorders to settle these sort of students into academic life.

Precautionary service should be the primary objective in education and sample programme studies should be developed. It would be a wise way to utilise our human resources by making this discussion a current issue in Turkey pedagogy agenda and developing a solution. Studies and researches about this problem are needed.

Reference

- American Psychiatric Association (1994). *Diagnostic and Statistical Manual of Mental Disorders (DSM IV)*. Washington, DC: American Psychiatric Association.
- Apak, S.(1989). *Gelişim Nörolojisi*. İstanbul Bayrak Matbaası.
- Arıkan, R. (2004). *Araştırma teknikleri ve rapor hazırlama*. Ankara: Asil Yayın.
- Aslantürk, Z.(1999). *Araştırma Metot ve Teknikleri*. İstanbul: Emre Matbaası.
- Aydın, C.&Ercan,E.S.(1999). *Dikkat Eksikliği Hiperaktivite Bozukluğu*. İstanbul: Gendaş A.Ş.
- Aydoğmuş, K. (1993). *Çocuklarda Uyum ve Davranış Bozuklukları*. İstanbul: Remzi Kitapevi.
- Aytuna, A.H. (1976). *Normal Çocuklarda Anormallikler*. İstanbul: Milli Eğitim Basımevi.
- Bakırcıoğlu, R. (1999). *Rehberlik ve Psikolojik Danışma*. İstanbul: Turhan Kitapevi.
- Balcı, A. (2005). *Sosyal bilimlerde araştırma*. Ankara: Pegem Yayınçılık
- Bingöl,A. (2003). *Ankara'daki İlkokul 2. Ve 3. 4. Sınıf Öğrencilerinde Gelişimsel Disleksi Oranı*, Ankara: A.Ü.Tıp Fakültesi Mecmuası,Cilt, 56, Sayı 2,67-82

- Bir,A.A.& et al. (1999). *Sosyal Bilimlerde Araştırma Yöntemleri*. Eskişehir: Anadolu Üniversitesi AÖF Yayınları-601
- Güleç, C.(1999). *Psikiyatrinin ABC'si*. İstanbul: Gendaş Yayınevi.
- Doris, J.L (1993). Defining Learning Disabilities: A History of The Search For Consensus. Lyon, GR., Gray, D. B., Kavanagh, J. F., Krasnegor, N.A. (Eds), *Better Understanding Learning Disabilities: New Views From Research And Implications for Education and Public Policies (S, 97-116)*. Baltimore: Paulh Brokes Pub. Comp.
- Dykman, R.A., Ackerman, P.T. (1991). Attention Deficit Disorder and Specific Reading Disability: Separate But Often Overlapping Disorders. *Journal of Learning Disabilities, 24 (2)*, 96-103.
- Fowler, M. (1991). *Attention Deficit Disorder*. Washington, DC: Briefing Paper: Natinoal İnformation Center for Children and Youth With Disabilities.
- Friedman, R.J. & Doyal,G.T.(1992). *Management of Children and Adolescents With Attention Deficit-Hyperactivity Disordor*, Austin.Texas: Pro-ed İnc.
- Goodman, G., Poillion, M.J. (1992). ADD: Acronym for any Dysfunction or Difficulty. *The Journal of Special Education, 26 (1)*, 37-56.
- Harris,R. An A.D.D.(1993-94) Child's Bill of Rights. *Newsletter of The Delaware Association For The Education of Young Children, Winter*
- Heward, W., Orlansky,M.D.(1984). *Exceptional Children (2'nd ed)*.Ohio; Charles E: Merill Publishing Company.
- Kaptan, S. (1983). *Bilimsel Araştırma Teknikleri ve İstatistik Yöntemleri*. Ankara: Rehber Yayınevi
- Karasar, N. (2005). *Bilimsel araştırma yöntemi*. Ankara: Nobel Yayın Dağıtım.
- Lerner, J., W. (1993). *Leraning Disabilities: Theories, Diagnosis and Teaching Strategies (6 Th Ed.)*. Boston: Houghton, Mifflin Company.
- Madi, B.(1989). "*Aşırı Hareketli Çocuklar*". Yaşadıkça Eğitmi. Sayı 8.
- Margalit, M. & Almourgy, K. (1991.). Classroom Behavior and Family Climate in Students with Learning Disabilities and Hiperactive Behavior. *Journal of Learning Disabilities, 24 (7)*, 406-412.
- Mirriam G. L. &et al(1987). *Heyecan Bozukluğu Olan Çocuklar. (Çev.: Hasan Karatepe)* Ankara: Karatepe Yayınları
- Murphy, V.& Stewart, H.K.(1991). Learning Disabilities And Anttention Deficit-Hiperactivity Disorder: And Interactional Perspective. *Journal of Learning Disabilities, 24 (7)* 386-388.
- Odabaşı,B. (2010). *Beyin Temelli Öğrenme Yaklaşımının Öğrenci Başarısına Etkisi*. G.Antep:Yayımlanmış Doktora Tezi, G.Antep Üniv. Sosyal Bilimler Enstitüsü

The relationship between hyperactivity dyslexia disorder and emotional intelligence and success

B. Odabaşı

Özçelik, D. A. (1981). *Araştırma teknikleri düzenleme ve analiz*. Ankara:ÜSYM Yayınları.

Özdoğan, B. (2000). *Çocuk ve Oyun*. Ankara: Anı Yayıncılık

Polvan, Ö.(1986). *Aşırı Hareketli Çocuklar ve Tedavisi*. *Aile ve Çocuk Dergisi*, Ak Yay.

Razon, N.(1987). *'Okulöncesi Çocukta Sık Rastlanan Uyum ve Davranış Sorunlarından Bazıları ve Anaokulunda Çözüm Önerileri*. İstanbul: YA-PA Okulöncesi Eğitimi ve Yaygınlaştırılması Semineri 5.

Romney, D.(1988). *Çocuklarda Davranış Bozuklukları*. (Çev.: Serbest,P.& Yılmaz,Y.). *Yaşadıkça Eğitim*. Sayı: 1 (4).

Roney, M. (1991). *The Effects Of Brain Hemisphere Dominance on Mathematical Achievement in Calculus At The College Level*, PhD thesis, University of Arkansas Graduate School of Education.

Russell, B.(2001). *Eğitim Üzerine(5nd Ed.)*. İstanbul: Say Yay.

Schaefer E.C.& Milliman, L.H.(1983). *Therapies for Children*, San Francisco and Washington: Josseu-Bass Publish.

Selçuk, Z(2001). *Dikkat Eksikliği ve Hiperaktif Çocuklar*. Ankara: Pegem Yayıncılık

Sencer, M. (1989). *Toplumbilimlerinde yöntem*. İstanbul: Beta Basım.

Senemoğlu, N., (1997). *Gelişim Öğrenme ve Öğretim*. Ankara: Spot Matbaacılık, 292

Silver, L,B,(1992). *The Misunderstood Child (2nd Ed.)*. Bredenton: Human Service Institute, Tabbooks.

Sürekli, D. (2004). *Beyin Asimetrisi, Çift Beyinli İnsan (Bir Örgüt Psikolojisi Araştırması: Üniversite Öğrencileri üzerinde Gerçekleştirilen Derinlemesine Bir Araştırma)*. İstanbul: Sistem Matbaacılık.

Wong, B.Y.L (1991). *Learning About Learning Disabilities*, San Diego, California: Academic Press, Inc.

Şenel, H.G.(1996).*Öğrenme Yetersizliği İle Dikkat Eksikliği-Aşırı Hareketlilik Bozukluğunun Karşılaştırılması*, Ankara: A.Ü. Eğitim Bilimleri Özel Eğitim Dergisi. Cilt 2. Sayı 2,76-90

Şenol, Z.(1999). *Hiperaktivite Nedir? Yaşadıkça Eğitim*. Sayı 61.

Yavuzer, H.(1996). *Çocuk ve Suç*. İstanbul: Remzi Kitapevi

Yazgan, Y.(1998).*Hiperaktivite Nedir?* İstanbul: Çekirdek Vakfı Yayını.

Yıldırım, C. (2000). *Bilim Felsefesi*. İstanbul: Remzi Kitabevi.

Yörükoğlu, A.(1983).*Çocuk Ruh Sağlığı*. (Ed.6).İstanbul: İş Bankası Yay.

Zulliger, H.(1991). *Suçlu Çocuklar ve Çocuk Mahkemeleri*. İstanbul: Cem Yayınları