

Full Length Research Paper

Effectiveness of leisure time activities program on social skills and behavioral problems in individuals with intellectual disabilities

Emine ERATAY

Department of Special Education, Faculty of Education, Abant İzzet Baysal University, Turkey

Accepted 11, July, 2013

The objective of this study is to evaluate the effectiveness of leisure time activities program in individuals with intellectual disabilities in terms of developing social skills and reducing behavioral problems. Social skills assessment scale, behavioral assessment form for children and young adults, and teacher's report forms were used in the quasi-experimental design. The data analysis revealed significant differences in improving self-control, coping with aggression and cognitive skills of social skills scale; thinking problems of behavior assessment scale, and attention problems of teacher's report form in the pretest-posttest data of the test group. The study suggests that leisure time activities program was partially effective on individuals with intellectual disabilities in terms of developing social skills and reducing emotional and behavioral problems.

Key words: Individual with intellectual disabilities, leisure time, leisure time activities program, social skills, behavioral problems.

INTRODUCTION

Leisure time activities consist of a series of engagements such as recreation, entertainment, knowledge and skill improvement and voluntary involvement in social life that individuals can participate in freely after fulfilling their family, social and professional responsibilities. These activities contribute to social development, behavior control, stability in work life, help individuals to cope with stress and overcome bad habits. They reduce the use of alcoholic drinks and drugs, encourage peer relations in adolescence and ensure identity development, inclusive education, individual support, optimism, self-control and communication (Arnon et al., 2008; Brodin, 1990; Cassidy, 2005; Lamarine and Polkinghorne, 1990; McConkey and Collins, 2010; Merino, 2007; Shaw et al., 1995; Trenberth and Dewe, 2005; Trenberth, 2005; Wendelborg and Kvello, 2010).

According to the 2002 definition of AAIDD (American Association on Intellectual and Developmental Disabilities), intellectual disability originates before the age of 18 and "is characterized by significant limitations both in intellectual functioning and adaptive behavior, which covers many everyday social and practical skills" (http://www.aaid.org/content_100.cfm). Leisure time activity programs (LTAPs) are aimed at individuals with intellectual disabilities at pre-school age, adolescence and adulthood. They also give guidance to families and teachers. Some studies have indicated that LTAPs are successful in individuals with disabilities. They have also been reported to aid the development of linguistic, cognitive, social, emotional, personal and motor skills of those taking part in these activities (Adult Education Linkage Services, 1998; Brodin, 1990; Hackensac and

Ithaca, 1990; Kanchisar, 1990; Lambert and Cruse, 1990; Leon Country School, 1991; Moon, 1992; North Carolina State Dept of Public Instruction, 1998; North Carolina University, 1994; O'Neill, 1990; Ray and Meidl, 1991; Soto, 1994; Suren and Shermis, 1997). These programs can also improve social adaptation, group interaction, functional capacity, general health and increase acceptance (Tezcan, 1994).

Leisure activities at school are important in terms of acquisition of vocational and professional skills by individuals with disabilities who are often excluded from the workforce (Gürsel et al., 2007). However, daily life skills are covered minimally at school (Dündar, 2002), and teachers do not provide adequate drawing or art activities or individualized training programs (Salderay, 2001; Çimen-Öztürk and Eratay, 2010). Learning support plays an important role in the transition from school to work (Wu, 2004), but leisure time activities are not included in the requirement lists (Ho, 1991). Families of individuals with intellectual disabilities also encourage participation of their children in leisure time activities (Karaküçük, 2005; Tezcan, 1994).

Individuals with intellectual disabilities participate in leisure activities at a lower rate than those without intellectual disabilities. Since they can also be excluded by their peers, they generally prefer activities in which they can be alone or participate passively in those requiring teamwork. However, participation in leisure time activities which involve co-operating with other individuals (Raghavan et al., 2009) in a stimulus-rich environment (Lionelle-De Nolf et al., 2010) is particularly useful in the education of these individuals. For example, summer camps as a form of leisure time activity can support the social, language, communication, daily life, and motor skills of individuals with intellectual disabilities and assist teachers in class management and families in developing new strategies for awards and coping with stress (Kahn, 2002). Furthermore, these activities can also encourage peer acceptance (Fischer and Barkley, 2006; Jessup et al., 2010; King et al., 2010; King et al., 2009; Peeters et al., 2009; Peniston, 1994; Reynolds, 2002; Spencer-Cavaliere and Watkinson, 2010; Stevens-Ratford and Krause, 2004; Yalon-Chamovitz et al., 2006). For this reason, individuals with intellectual disabilities need to be encouraged to participate in team activities in inclusive education (Dusseljee et al., 2011; Glausier, 1996; Solish et al., 2010; Verdonshot et al., 2009; Whorton, 1994).

Activities carried out alone by adolescents with intellectual disabilities provide social development and encourage interaction with peer groups, and activities in rural areas provide a more positive and affirmative perception of individuals with disabilities (Hine and Hedlund, 1990; Randel and Cumella, 2009). These activities may be grouped as special occasions, physical orientation, artistic, religious, audio, visual, food-beverages activities, games and visits (Zijstra and Vlaskamp, 2005). One study revealed that students with intellectual disabilities were generally occupied with similar activities

compared to those without disabilities, such as watching television and reading magazines, newspapers and comic books (Leyser and Cole, 2004).

In Turkey, there have been a number of single-case studies which have investigated the use of different types of leisure time activities on individuals with intellectual disabilities such as food-beverage activities (Atmaca-Karataş, 1996; Bozkurt and Gürsel, 2005; Bozkurt and Tekin-İftar, 2003; Halisküçük and Çiğçi-Tekinarslan, 2007); handicraft activities (Aslan and Eratay, 2009; Çankaya and Eratay, 2011; Demir, 1996; Eratay and Özkan, 2004; Özokçu, 1997); artistic activities (Demirezen, 2006; Özbey, 2005); ceramic works (Köse, 2006; Vuran et al., 2001) and drawing-art (Paksoy, 2003); sports activities, (İlhan, 2008; Çiftçi, 2001) and other activities including car washing (Topsakal, 2004), and photocopying (Yücesoy, 2002). However, studies examining the effects of a program covering several leisure time activities could not be found. The provision of training in self-care, domestic and daily life skills for individuals with intellectual disabilities by different methods has been shown to be effective (Cavkaytar, 1999; Gürkan-Işıl, 1994; Sarı, 2003; Şabanova, 2000; Özen et al., 2003). This study examines effectiveness of leisure time activities applied as a group activity for individuals with intellectual disabilities. In this context, it is assumed that the study shall fill the said gap in the literature. It is believed that the program shall also inform teachers and candidate teachers of special education. Handbooks have been prepared for the activities included into the program, and it is believed that these handbooks can be useful for the teachers and families of children and young individuals with special needs. The study is considered important in terms of the contribution to the integration of the individuals in the test group in the study in society, and to their social developments with the group activities that are applied. The study has presented new activities that aim at making leisure time activities more effective. In this context, the study is considered important as it shall contribute to children and young individuals with special needs in different programs. The aim of the current study is to assess the effectiveness of a leisure time activities program (LTAP) in the development of social skills and reduction of behavioral problems in individuals with intellectual disabilities. The hypothesis of the study is that the prepared leisure time activities program is effective in the social development and behavioral problems of individuals with intellectual disabilities.

METHODS

Participants

This study employed a multi-subject quasi-experimental design with pre-test-post-test and a matched control group. Given that it is difficult to carry out leisure time activities with large groups, the sample groups of the current study were kept small. Thirty-two

individuals aged 15–39 years with a moderate level of intellectual disability participated. Individuals with a moderate level of intellectual disability are defined in the DSM 4-tr directive as those who can benefit from vocational services and learn social skills.

All participants were recruited from a province in the Western Black Sea Region in Turkey. The test and the control groups were matched based on certain variables (age, gender and disability degree) and individuals were randomly allocated to the groups. The test and control groups were made equivalent in terms of age, gender and type of disability. The arithmetic mean of the age of the participants in the groups was $\bar{X}=21$. Sixteen individuals (eight males and eight females) were allocated to the test group. All individuals in the test group and the control group are individuals with a moderate level of intellectual disability. Both the test group and the control group have one individual with Down syndrome. Moreover, an individual in the test and control groups has orthopedic disability causing slight walking problems in addition to intellectual disability. Individuals in the test group are attending a private rehabilitation center, while those in the control group are attending a state school. All participants were capable of following instructions, had sufficient hand-eye coordination, and were capable of fulfilling self-care skills, and none had previously received social skill training.

Outcome Variables: Social skills and behavioral problems, outcome variables were evaluated using three different scales. These variables were evaluated before and after the LTAP intervention.

Social skills were evaluated using the Social Skills Assessment Scale (SASS) (for ages 7-12) developed by Akçamete and Avcioğlu (2005). This is a five-point Likert-type scale and the total score ranges from 69 to 345. Content and construct validity have been demonstrated. Content validity was determined by five lecturers working in the field of child development and education. They stated that the SASS is capable of measuring social skills. The construct validity determined by means of principal component analysis was applied to items, revealing that those grouped in 16 factors had an eigenvalue >1 and explained 75.3% of the variance. The shared variance of the 16 factors varied between 0.454 and 0.911, and this explained the majority of the total variance and the variance related to the scale. Cronbach's alpha coefficient for the full SSAS was 0.98 and Cronbach's alpha coefficients varied between 0.70 and 0.95 for individual items.

Behavioral problems were evaluated using the 6–18 Age Children and Young Individuals Behaviour Checklist (CBCL/6–18) and the Teacher's Report Form Turkish translation (TRF/6–18) (Erol and Şimşek, 2010). The CBCL/6–18 was completed by the parents or the caregivers of the individuals. Validity and reliability have been demonstrated on the data from the parents of 3129 children representing three different socioeconomic levels (Erol et al., 1995, cited in Erol and Şimşek, 2010). Test-retest reliability coefficients of the 2001 form were 0.78 for total reliability, 0.78 for outer orientation and 0.87 for inner orientation (Erol and Şimşek, 2010). The TRF/6–18 is completed by the teacher, school administrator, advisor, or special educator to evaluate the functioning and behaviors of the child at school. This scale has test-retest reliability coefficients of 0.96 for the total problem, 0.93 for the outer orientation and 0.89 for the inner orientation. The TRF/6–18 has a moderate degree of concurrence with the CBCL/6–18, and has acceptable construct, content and consistency validity (Erol and Şimşek, 2010).

LTAP intervention: The contents of the LTAP were determined based on existing programs (MEB, 2001; MEB, 2002), aiming at individuals with and without disabilities. The application environment was designed to be a school and class environment; therefore, outdoor and sports activities were excluded and activities were restricted to indoor activities that can be realized semi-passively,

that is, activities which can be carried out in the classroom. Thirty activities that can be performed by individuals with intellectual disabilities were assigned to 24 students in the first year and 21 in the second year of "Teaching Work and Vocational Skills to Individuals with Intellectual Disabilities" course in the Special Education Department of a state-run university. Special education candidate teachers were classified in 30 groups according to 30 different activities. Teachers conducted skill analysis of the activities. The skill analyses were discussed and evaluated in a classroom environment. LTAP activities were prepared by cascading according to the direct teaching model. The special education candidate teachers are working at university in some of the lessons while the postgraduate students are working personally as the teachers of these students. They know the students very well and are in constant interaction with them. For this reason, we have worked with the candidate teachers and teachers who are postgraduate students in adaptation of the activities and preparation of the handbook when preparing the program. For instance, marbling art is a Turkish handcraft (Appendix 1).

Individuals with intellectual disabilities are less active than the general population and are primarily engaged in manual activities (Temple and Walkley, 2003). Online learning and teaching have been shown to be effective in training occupational therapy teachers (Simons et al., 2002); therefore, care was taken to ensure that manual activities were included in the LTAP and computer programs were used in the training of candidate teachers. Candidate teachers demonstrated their activities to children with intellectual disabilities at a private special education center. The sequence in which the activities were conducted was modeled for the children. The 30 selected activities were reduced to 19 activities due to limitations related to application conditions, environment and the cost (Table 1). These activities were the ones which could be carried out in the classroom. Activities were offered for a 2-h period, 3 days a week in the spring term of the 2009–2010 academic year. The activities were led by a group of eight undergraduate candidate teachers taking the "Work Education for Individuals with Intellectual Disability" course on Wednesdays, the handcrafts teacher of the school on Thursdays, and the author on Fridays.

Individuals in the test group attended LTAP at the Special Education and Rehabilitation Centre for 6 h per week (2 h per day on Wednesdays, Thursdays and Fridays). Video recordings were made during the activities, which were taught with a direct structured method. Direct teaching method is a teacher-oriented regular teaching model according to behavioral approach principles and it requires systematic use of a regular program and tools, which is directed by the teacher to ensure mastery of certain skills and which provides superior level of involvement. This method is used in skills that are taught step by step (Rosenberg et al., 1998; Stein et al., 2006). The direct teaching model gives the opportunity for more exercises than is possible in natural environments and daily opportunities in a structured format within the same time period for risk students (Engelmann, 2003). A list of reinforcement such as favorite food and small gifts was prepared, and food and activity awards enjoyed by the participants were given. The participants were allowed to taste the foods and beverages that they prepared during the food and beverage preparation activities. Individuals in the control group attended only the activities at their school and did not participate in the LTAP.

Program reliability and validity

A team of specialists including a specialist in further education, a home economics teacher, a girls' vocational high school teacher, and three special education lecturers reached an agreement at a rate of 90% in the suitability of 19 activities in terms of content validity. The participants of the study determined whether each member of the test group could perform the activities during the

Table 1. Results of Mann-Whitney U tests of baseline score for each subscale of the Social Skills Assessment Scale between test and control groups.

Social skills scale / Sub-scales	Group	n	Mean rank value	Rank total	U	p																																																																																																										
Basic social skills	Test	16	15.63	250.00	114.00	.616																																																																																																										
	Control		17.380	278.00			Basic speech skills	Test	16	14.31	229.00	93.00	.196	Control	18.69	299.00	Advanced speech skills	Test	16	15.63	250.00	114.00	.616	Control	17.38	278.00	Relationship starting skills	Test	16	16.63	166.00	126.00	.956	Control	16.38	262.00	Relationship maintaining skills	Test	16	14.09	225.50	89.50	.149	Control	18.91	302.50	Group work skills	Test	16	14.31	229.00	93.00	.196	Control	18.69	299.00	Emotional skills	Test	16	15.81	246.50	117.00	.696	Control	17.19	281.50	Self-control skills	Test	16	15.41	246.50	110.50	.515	Control	17.59	281.50	Coping with aggressive behaviors skill	Test	16	16.31	231.00	94.00	.196	Control	18.69	299.00	Accepting consequences skills	Test	16	16.63	266.00	126.00	.956	Control	16.38	262.00	Giving directions skills	Test	16	15.63	256.00	116.00	.946	Control	15.38	252.00	Cognitive skills	Test	16	15.41	246.50	110.50
Basic speech skills	Test	16	14.31	229.00	93.00	.196																																																																																																										
	Control		18.69	299.00			Advanced speech skills	Test	16	15.63	250.00	114.00	.616	Control	17.38	278.00	Relationship starting skills	Test	16	16.63	166.00	126.00	.956	Control	16.38	262.00	Relationship maintaining skills	Test	16	14.09	225.50	89.50	.149	Control	18.91	302.50	Group work skills	Test	16	14.31	229.00	93.00	.196	Control	18.69	299.00	Emotional skills	Test	16	15.81	246.50	117.00	.696	Control	17.19	281.50	Self-control skills	Test	16	15.41	246.50	110.50	.515	Control	17.59	281.50	Coping with aggressive behaviors skill	Test	16	16.31	231.00	94.00	.196	Control	18.69	299.00	Accepting consequences skills	Test	16	16.63	266.00	126.00	.956	Control	16.38	262.00	Giving directions skills	Test	16	15.63	256.00	116.00	.946	Control	15.38	252.00	Cognitive skills	Test	16	15.41	246.50	110.50	.515	Control	17.59	281.50						
Advanced speech skills	Test	16	15.63	250.00	114.00	.616																																																																																																										
	Control		17.38	278.00			Relationship starting skills	Test	16	16.63	166.00	126.00	.956	Control	16.38	262.00	Relationship maintaining skills	Test	16	14.09	225.50	89.50	.149	Control	18.91	302.50	Group work skills	Test	16	14.31	229.00	93.00	.196	Control	18.69	299.00	Emotional skills	Test	16	15.81	246.50	117.00	.696	Control	17.19	281.50	Self-control skills	Test	16	15.41	246.50	110.50	.515	Control	17.59	281.50	Coping with aggressive behaviors skill	Test	16	16.31	231.00	94.00	.196	Control	18.69	299.00	Accepting consequences skills	Test	16	16.63	266.00	126.00	.956	Control	16.38	262.00	Giving directions skills	Test	16	15.63	256.00	116.00	.946	Control	15.38	252.00	Cognitive skills	Test	16	15.41	246.50	110.50	.515	Control	17.59	281.50																
Relationship starting skills	Test	16	16.63	166.00	126.00	.956																																																																																																										
	Control		16.38	262.00			Relationship maintaining skills	Test	16	14.09	225.50	89.50	.149	Control	18.91	302.50	Group work skills	Test	16	14.31	229.00	93.00	.196	Control	18.69	299.00	Emotional skills	Test	16	15.81	246.50	117.00	.696	Control	17.19	281.50	Self-control skills	Test	16	15.41	246.50	110.50	.515	Control	17.59	281.50	Coping with aggressive behaviors skill	Test	16	16.31	231.00	94.00	.196	Control	18.69	299.00	Accepting consequences skills	Test	16	16.63	266.00	126.00	.956	Control	16.38	262.00	Giving directions skills	Test	16	15.63	256.00	116.00	.946	Control	15.38	252.00	Cognitive skills	Test	16	15.41	246.50	110.50	.515	Control	17.59	281.50																										
Relationship maintaining skills	Test	16	14.09	225.50	89.50	.149																																																																																																										
	Control		18.91	302.50			Group work skills	Test	16	14.31	229.00	93.00	.196	Control	18.69	299.00	Emotional skills	Test	16	15.81	246.50	117.00	.696	Control	17.19	281.50	Self-control skills	Test	16	15.41	246.50	110.50	.515	Control	17.59	281.50	Coping with aggressive behaviors skill	Test	16	16.31	231.00	94.00	.196	Control	18.69	299.00	Accepting consequences skills	Test	16	16.63	266.00	126.00	.956	Control	16.38	262.00	Giving directions skills	Test	16	15.63	256.00	116.00	.946	Control	15.38	252.00	Cognitive skills	Test	16	15.41	246.50	110.50	.515	Control	17.59	281.50																																				
Group work skills	Test	16	14.31	229.00	93.00	.196																																																																																																										
	Control		18.69	299.00			Emotional skills	Test	16	15.81	246.50	117.00	.696	Control	17.19	281.50	Self-control skills	Test	16	15.41	246.50	110.50	.515	Control	17.59	281.50	Coping with aggressive behaviors skill	Test	16	16.31	231.00	94.00	.196	Control	18.69	299.00	Accepting consequences skills	Test	16	16.63	266.00	126.00	.956	Control	16.38	262.00	Giving directions skills	Test	16	15.63	256.00	116.00	.946	Control	15.38	252.00	Cognitive skills	Test	16	15.41	246.50	110.50	.515	Control	17.59	281.50																																														
Emotional skills	Test	16	15.81	246.50	117.00	.696																																																																																																										
	Control		17.19	281.50			Self-control skills	Test	16	15.41	246.50	110.50	.515	Control	17.59	281.50	Coping with aggressive behaviors skill	Test	16	16.31	231.00	94.00	.196	Control	18.69	299.00	Accepting consequences skills	Test	16	16.63	266.00	126.00	.956	Control	16.38	262.00	Giving directions skills	Test	16	15.63	256.00	116.00	.946	Control	15.38	252.00	Cognitive skills	Test	16	15.41	246.50	110.50	.515	Control	17.59	281.50																																																								
Self-control skills	Test	16	15.41	246.50	110.50	.515																																																																																																										
	Control		17.59	281.50			Coping with aggressive behaviors skill	Test	16	16.31	231.00	94.00	.196	Control	18.69	299.00	Accepting consequences skills	Test	16	16.63	266.00	126.00	.956	Control	16.38	262.00	Giving directions skills	Test	16	15.63	256.00	116.00	.946	Control	15.38	252.00	Cognitive skills	Test	16	15.41	246.50	110.50	.515	Control	17.59	281.50																																																																		
Coping with aggressive behaviors skill	Test	16	16.31	231.00	94.00	.196																																																																																																										
	Control		18.69	299.00			Accepting consequences skills	Test	16	16.63	266.00	126.00	.956	Control	16.38	262.00	Giving directions skills	Test	16	15.63	256.00	116.00	.946	Control	15.38	252.00	Cognitive skills	Test	16	15.41	246.50	110.50	.515	Control	17.59	281.50																																																																												
Accepting consequences skills	Test	16	16.63	266.00	126.00	.956																																																																																																										
	Control		16.38	262.00			Giving directions skills	Test	16	15.63	256.00	116.00	.946	Control	15.38	252.00	Cognitive skills	Test	16	15.41	246.50	110.50	.515	Control	17.59	281.50																																																																																						
Giving directions skills	Test	16	15.63	256.00	116.00	.946																																																																																																										
	Control		15.38	252.00			Cognitive skills	Test	16	15.41	246.50	110.50	.515	Control	17.59	281.50																																																																																																
Cognitive skills	Test	16	15.41	246.50	110.50	.515																																																																																																										
	Control		17.59	281.50																																																																																																												

N=16 for each group.

pre-LTAP test, post-LTAP test, and follow-up observation. Because the number of the participants was less than 30, test-retest reliability was examined for pre-LTAP test-post-LTAP test scores and the Spearman correlation was 1. Pre-LTAP test and post-LTAP test scores were also compared using the on signed-rank test, and there was a significant difference in favor of the final test ($Z=-3.568$, $p=0.000$), but no difference between the post-test and the follow-up observation. Observers were selected from postgraduate students in the field of special education and interrater reliability data were collected in 30% of the sessions by preparation of forms that included individual skills analysis steps of the activities. Interrater reliability was calculated as 90% based on the formulation below, $(\text{number of agreements})/(\text{number of agreements} + \text{number of disagreements}) \times 100$ (Tekin and Kircaali, 2004).

A pilot study was conducted with the help of field specialists to ensure the social reliability of the program by collecting data from the families and teachers involved in the program. In the social validity data, the teachers reported that the students carried out these activities with great pleasure both at school and home. They also commented that they had made use of the activities themselves, and that the activities supported the students' development. The families also reported that their children were happy doing the activities, and that they were beneficial and could be used more frequently.

Data analysis: SPSS 15.0 software was used for all analyses. In order to determine whether both groups were equal at the pre-LTAP stage, baseline (pre-LTAP a) scores on each subscale of the

Table 2. Results of Mann-Whitney U tests of baseline score for each subscale of the 6-18 age children and young individual behavior checklist.

Behavior assessment scale/ sub-scales	Group	n	Mean rank value	Rank total	U	p
Anxiety / depression	Test	16	17.31	277.00	115.00	.642
	Control		15.69	251.00		
Social introversion / depression	Test	16	15.28	244.50	108.50	.468
	Control		17.72	283.50		
Somatic complaints	Test	16	16.75	286.00	76.00	.061
	Control		13.25	212.00		
Rule defying behavior	Test	16	19.13	306.00	86.00	.119
	Control		13.88	222.00		
Aggressive behaviors	Test	16	17.63	282.00	110.00	.515
	Control		15.38	246.00		
Social problems	Test	16	16.44	263.00	127.00	.985
	Control		16.56	265.00		
Thinking problems	Test	16	18.53	296.50	95.50	.224
	Control		14.47	231.50		
Attention problems	Test	16	17.53	280.50	111.50	.539
	Control		15.47	247.50		

N=16 for each group.

SASS, CBCL/6–18 and TRF/6–18 were compared across groups (test, control) using Mann-Whitney U tests. To determine whether there were any significant differences within each group, scores on each subscale of the SASS, CBCL/6–18 and TRF/6–18 were compared across time points (pre-LAP; post-LTAP) using Wilcoxon signed-rank tests. Video recordings were analyzed by Special Education postgraduate students. Pre-tests were collected in February 2010, post-tests were collected in May 2010 and the observation and the permanence data were collected in July 2010. Social validity data were collected from the families and teachers at the end of the program.

RESULTS

At baseline, the test and control groups were found to be equal in terms of demographics and each subscale of the SASS (Table 1), CBCL/6–18 (Table 2) and TRF/6–18 (Table 3).

In the test group, there was a significant difference in the self-control, coping with aggression, and cognitive skills subscales of the SASS between pre- and post-LTAP time points (Table 4). There were no differences in the basic social skills ($Z=0$, $p=1$), basic speech ($Z=0$, $p=1$), advanced speech ($Z=0$, $p=1$), establishing relationships ($Z=0$, $p=1$), working in groups ($Z=0$, $p=1$), emotional

skills ($Z=0$, $p=1$), accepting consequences ($Z=1.082$, $p=0.279$) or giving instructions ($Z=1.32$, $p=0.185$) subscales of the SASS. In the control group, all subscales of the SASS were similar at pre- and post-LTAP time points.

In the test group, there was a significant difference in thinking problems subscale of the CBCL/6–18 between pre- and post-LTAP time points (Table 5). There were no differences between anxiety-depression subscale ($Z = 0.955$, $p=0.339$), social introversion- depression ($Z=1.26$, $p=0.205$), somatic complaints ($Z=0.734$, $p=0.463$), rule-defying behaviors ($Z=0.045$, $p=0.964$), aggressive behaviors ($Z=0$, $p=1$), or social problems ($Z=1.03$, $p=0.303$) subscales of the CBCL/6–18. In the control group, all subscales of the CBCL/6–18 were similar at pre- and post-LTAP time points.

In the test group there was a significant difference in the attention problems subscale of the TRF/6–18 between pre- and post-LTAP time points (Table 6). There were no differences in the anxiety/depression ($Z=0.675$, $p=0.500$), social introversion/depression ($Z=0.108$, $p=0.914$), somatic complaints ($Z=0.764$, $p=0.445$), aggressive behavior ($Z=0.375$, $p=0.708$), social problems ($Z=1.125$, $p=0.261$), or thinking problems ($Z=0.465$,

Table 3. Results of Mann-Whitney U tests results of baseline score for each subscale of the teacher's report form.

Teacher's report form/ sub-scales	Group	n	Mean rank value	Rank total	U	p
Anxiety / depression	Test	16	18.72	299.50	92.50	.184
	Control		14.28	228.50		
Social introversion / depression	Test	16	18.56	297.00	95.00	.224
	Control		14.44	231.00		
Somatic complaints	Test	16	16.72	267.50	124.50	.897
	Control		16.28	260.50		
Rule defying behavior	Test	16	16.28	260.50	124.50	.897
	Control		16.72	267.50		
Aggressive behaviors	Test	16	17.34	277.50	114.50	.616
	Control		15.66	250.50		
Social problems	Test	16	16.25	260.00	124.00	.897
	Control		16.75	268.00		
Thinking problems	Test	16	16.25	260.00	124.00	.897
	Control		16.75	268.00		
Attention problems	Test	16	17.31	277.00	115.00	.642
	Control		15.69	251.00		

N=16 for each group.

Table 4. Results of Wilcoxon signed rank test for subscale of the social skills assessment scale that was different before and after the leisure time activities program in the test group.

Sub-scale	Pretest–posttest	Mean rank value	Rank total	Z	p
Self-control skills	Negative rank	9.21	110.50	2.20	.028
	Positive rank	6.38	25.50		
	Equal	0			
Coping with aggression skills	Negative rank	7.75	15.50	2.53	.011
	Positive rank	8.04	104.50		
	Equal	1			
Cognitive skills	Negative rank	6.33	6.33	2.34	.019
	Positive rank	8.42	8.42		
	Equal	1			

$p=0.642$) subscales of the TRF/6–18. In the control group, all subscales of the TRF/6–18 were similar at pre- and post-LTAP time points.

In the analysis of the video recordings, it was observed that all the participants were involved in all the activities. It was also observed that there were no occurrences of problem behavior, and that participants enjoyed taking part in the activities. When asked at the end of the

program whether they had enjoyed the activities, all of the participants replied that they had and that they would like to do them again.

According to the social reliability data, it was found that families were pleased that their children had taken part in these activities that their children had learned as a result of their participation, that they also carried out the activities at home, and that they would like their children

Table 5. Results of Wilcoxon signed rank test for subscales of the 6-18 Age children and young individual behavior checklist that was different before and after the leisure time activities program in the test group.

Sub-scale	Pretest – posttest	Mean rank value	Rank total	Z	p
Thinking problem	Negative rank	7.61	106.50	266	.008
	Positive rank	13.50	13.50		
	Equal	1			

Table 6. Results of Wilcoxon signed rank test for subscales of the teacher's report form that were different before and after the leisure time activities program in the test group.

Sub-scale	Pretest – posttest	Mean rank value	Rank total	Z	p
Attention problems	Negative rank	17.76	337.50	2.16	.030
	Positive rank	11.59	127.50		
	Equal	2			

to continue doing so in the future. The teachers commented that they had added the activities to their requirement lists, that they had enjoyed carrying them out, and that they would like to use the activities in the future. It was observed in the video recordings that the teachers carrying out the application applied the activity steps in correct order and that the students learned the activities.

DISCUSSION

The LTAP applied in this study was designed using existing literature (Zijstra and Vlaskamp, 2005) and specialist opinions. Video recordings and the personal observations of the author indicate that the participants in the test group enjoyed the activities, supporting the data of Glausier (1996) and Hine and Dedlund (1990). The content validity and test-retest reliability of the LTAP are evidenced by the difference in the pre- and post-LTAP SASS, CBCL/6–18, and TRF/6–18 scores, and the similar post-LTAP results and the interrater reliability of the observation, video-recording and social reliability data. The test and control groups were similar at baseline, and the control group had no change in social skills and emotional and behavioral problems over the course of the study. By contrast, the test group had improvements in social skills (specifically, self-control, coping with aggression and cognitive skills) and behavioral problems (specifically thinking problems and attention problems). These results imply that the LTAP was effective in developing social skills and reducing emotional and behavioral problems.

The success of LTAP parallels previous reports of success of leisure time programs in supporting social and cognitive skills of individuals with intellectual disabilities (Adult Education Linkage Services, 1998; Hackensac and

Ithaca, 1990; Kanchisar, 1990; Kelsey and Busser, 1990; Leon Country School, 1991; Moon, 1992; North Carolina State Dept of Public Instruction, 1998; North Carolina University, 1994; O'Neill, 1990; Ray and Meidl, 1991; Soto, 1994; Suren and Shermis, 1997). In a study conducted by Rodger et al. (2006) on occupational therapy programs in different countries, they found that these programs helped to reduce behavioral problems, partially similar to the findings of the current study.

The findings of the current study are also similar to that of King et al. (2003), in which they developed a conceptual model for the use of recreational and leisure time activities for individuals with intellectual disabilities. Other disability groups have also been shown to benefit from LTAPs (Zijstra and Vlaskamp, 2005). The results of the current study are coherent with the findings of Stevens-Ratford and Krause (2004), who worked with individuals with visual disabilities.

The social reliability data obtained from the test group and their parents and teachers indicate that participants enjoyed the activities. Teachers were of the opinion that the LTAP made positive contributions to all development fields and parents requested the broadening and continuation of the activities. This supports Jessup et al. (2010), who reported that leisure time activities for individuals with visual disabilities contribute to success, desired identity, and confidence. The LTAP carried out in the current study is similar to those in previous studies in that it included activities that involved teamwork (Dusseljee et al., 2011; Glausier, 1996; Solish et al., 2010; Verdonshot et al., 2009; Whorton, 1994). In addition, the LTAP activity sessions in the present study were led by adults, and the results, therefore, support the findings of Raghavan et al. (2009), who found that there are benefits of involving peers and liaison personnel in an LTAP.

The study has similarities with those suggesting that simultaneous prompting is effective in individualized

teaching materials. Such materials contribute to individuals with intellectual disability in terms of sustainability and generalization of what is learned after the teaching is completed (Aslan and Eratay, 2009; Özbey, 2005; Özokçu, 1997; Topsakal, 2004; Vuran, 2008; Yücesoy, 2002).

The findings of the current study partially support those of Bozkurt and Gürsel's (2005) involving kitchen skills such as preparation of herbal tea and milkshake. They also support the findings of Köse (2006) and Vuran et al. (2001) in terms of involving activities similar to ceramic works and resulting in a positive behavioral change and Paksoy's (2003) in terms of involving drawing-craft activities. The social reliability data showed that involvement of participant's mothers in the program satisfied them. In this context, the findings of the current study support the data of Cavkaytar (1999), Işıl (1994), Sarı (2003), Şabanova (2000) and Özen et al. (2003).

Because individuals without disabilities were not included in the study, social interaction was not well developed. The test group only improved on the self-control, coping with aggressiveness, and cognitive skills subscales of the SASS, and lack of improvement in other social skills may be due to the non-inclusion of peers without disability, supporting the findings of Wendelburg and Kvello (2010). The test group also improved thinking and attention problems, supporting the results of Trenberth (2005), which showed that leisure time brings a new style of thinking, coping with stress and providing balance and the results of Ajzen and Driver (1992), which related leisure time activities to behavioral control. According to Pawelko and Magafas (1997), leisure time activities establish integration, develop social responsibility, facilitate the learning environment, provide a new life experience, and reinforce the role of adults. Improvements in cognitive skills after the LTAP may therefore be explained by the fact that learning was facilitated, and the improvement in self-control and coping with aggression may be explained by adult roles being gradually adopted. According to Shaw et al. (1995), leisure time activities have a positive impact on identity behavioral problems of the test group may be considered as a positive indicator of identity development; therefore, the results of this study can be considered to support the findings of Shaw et al. (1995) indirectly.

According to Melman et al. (2007), somatic disorders are not observed in individuals participating in leisure time activities. The similarity of somatic complaints in the test group at pre- and post-LTAP time points in the present study are in line with this conclusion. Tezcan (1994) stated that making use of leisure time is a neglected area for individuals with disabilities. In the current study, the participants were involved with leisure time activities for the first time through their education. Coupled with the fact that the current program was short-term, this could explain why the program was only partially effective in some aspects. A longer-term

program could yield more significant results.

Completion and exhibition of the products made by the young persons in an exhibition at the end of the program are partially in line with the summer camp study of Kahn (2002) in terms of ensuring achievement of a task and providing new experiences. The product output from the activities shows that the participants realized and completed the job skill, supporting the findings of Peniston (1994), which showed that the participants were able to produce an end-product on successful completion of the program. This shows that the LTAP helped the participants to learn new skills successfully.

Teachers of individuals with intellectual disabilities should give significance to leisure time activities (Wu, 2004) and include these activities in their requirement lists (Ho, 1991). There is improvement in the social skills and emotional and behavioral problems of the test group as well as success of teaching support. In these terms, the study is coherent with the results of Wu (2004). The satisfaction and support of the school principal throughout the implementation of the program and the presence of voluntary teachers who did not participate in the process, but who are interested and who obtained examples of activities may be an indication of the need to include leisure time activities in the requirement lists. In this context, the study supports the data of Ho's (1991). The findings of the current study support those of Vandercock (1991) in terms of the need to provide an increase in peer-interaction and social behavior; and the findings of Beitz (1996) in terms of continuous motivation, development and social integration.

The reason for the teachers and families obtaining different results from the same students by means of a similar checklist can be explained by the fact that the teachers had conducted more academic activities with the students and had found the opportunity to observe and assess them more carefully. Moreover, the low education and socioeconomic level of the families can create a negative factor in terms of showing adequate care and assessment of the children.

LTAP intervention was limited to half-term. A longer duration may, therefore, yield more significant results which can be investigated in future studies. Moreover, the limited number of participants in the groups could have affected the statistical power of the results. The LTAP in the current study could be researched with groups consisting of more participants. Similarly, repeated validity and reliability processes could not be performed due to the low number of participants for the scales. Finally, the Youth Self-Report scale was not applied, so it was not possible to access the opinions of the participants in the current study.

Conclusion

The LTAP led to improvements in social skills (namely

self-control, coping with aggression, and cognitive skills) and behavioral problems (namely thinking and attention problems). The LTAP may be even more effective if used over a longer period. In the future, outdoor activities, sports, drama, and folk dances may be included in the program to prepare a multi-oriented and richer program. It would be interesting to assess the effectiveness of the LTAP in different disability groups with different scales, and to include inclusive education.

A wider variety of activities could be included in the LTAP, and longer running programs could provide more benefit for young people with intellectual disabilities. Including more of these types of activities in the education of these young people could contribute to their social development and help to reduce their behavioral problems.

REFERENCES

- AAIDD (2002). American Association on Intellectual and Developmental Disabilities. (http://www.aaidd.org/content_100.cfm).
- Adult Education Linkage Services, Troy, P.A. (1998). Special needs survey final report. (ED. 427 235). Washington DC: Pennsylvania State Department of Education Harrisburg Bureau of Adult Basic and Literacy Education. Department of Education.
- Ajzen T, Driver BL (1992). Application of the theory of planned behavior to leisure choice. *J. Leisure Res.* 24(3):207-224.
- Akçamete G, Avcıoğlu H (2005). Sosyal becerileri değerlendirme ölçeğinin (7-12 yaş) geçerlik ve güvenirlik çalışması. (Reliability and validity study of the social skill evaluation scale (Age 7-12). *Abant İzzet Baysal Üniversitesi Eğitim Fakültesi Dergisi* 5(2):61-77.
- Arnon S, Shamai S, Ilatov Z (2008). Socialization agents and activities of young adolescent. *Adolescence* 43(170):373-397. (<http://www.tr.wou.edu/dblink>).
- Aslan Y, Eratay E (2009). Zihin engelli bireylere kumaş üzerine çizilen desene pul işleme becerisinin öğretiminde eşzamanlı ipucuyla öğretimin etkililiği. (Effectiveness of teaching with simultaneous prompting in teaching the skill of sequin embroidery on a pattern drawn on fabric for individuals with mental disability). *Ankara Üniversitesi Eğitim Bilimleri Fakültesi, Özel Eğitim Dergisi* 10(2):15-34.
- Atmaca-Karataş I (1996). Zihinsel engelli çocuklara yemek pişirme becerilerini kazandırmada bireyselleştirilmiş öğretim materyalinin etkisi. [Effect of individualized teaching materials on teaching cooking skills to children with intellectual disability] Unpublished Master's Thesis. Gazi University, Ankara. Turkey.
- Beitz S (1996). Sports in Germany. (ED. 399 226). Boon, Germany: Inter Nationes. Kennedyallee.
- Bozkurt F, Gürsel O (2005). Effectiveness of constant time delay on teaching snack and drink preparation skills to children with mental retardation. *Educ. Train. Dev. Disabil.* 40(4):394-400.
- Bozkurt F, Tekin-İftar E (2003). Zihin özürü bireylere yiyecek hazırlama becerilerinin öğretilmesiyle ilgili alanyazın taraması. (Literature scan related with teaching food preparation skills to individuals with intellectual disability). *Özel Eğitim Dergisi* 4(2):1-12.
- Brodin J (1990). Communication in profoundly mentally retarded and multiply handicapped children. (ED. 330 186). Paper presented at the international ISAAC Conference on augmentative and alternative communication. (4 th, Stockholm. Sweden, August 12-16).
- Çankaya Ö, Eratay E (2011). Zihinsel engelli öğrencilere örgü örme becerisinin öğretiminde eşzamanlı ipucuyla öğretimin etkililiği. [Effectiveness of simultaneous prompting on teaching stockinette stitching skill to students with mental retardation]. *Abant İzzet Baysal Üniversitesi Eğitim Fakültesi Dergisi* 11(2):11-34.
- Cassidy T (2005). Leisure, coping and health: The role of social, family, school and peer relationship factors. *British Journal of Guidance and Counselling*, 33(1):51-66. (doi: 10.1080/03069880412331335830).
- Cavkaytar A (1999). Zihin engellilere özbakım ve eviçi becerilerinin öğretiminde bir aile programının etkililiği. [The effectiveness of a parent training program for teaching self-care and domestic skills to mentally handicapped children]. *Özel Eğitim Dergisi* 2(3):40-50.
- Çiftçi C (2001). 12-16 yaş eğitilebilir düzeyde zihinsel engelli çocuklarda beden eğitimi ve spor derslerinin bazı motorik özelliklere etkisi (Türkiye ve Almanya uygulaması). [Effect of Physical Education and Sports Lessons on Certain Motoric Characteristics of 12-16 age Trainable Children with Intellectual Disability] Unpublished Master's Thesis. Sakarya University, Sakarya. Turkey.
- Çimen-Öztürk C, Eratay E (2010). Eğitim uygulama okuluna devam eden zihin engelli öğrencilerin öğretmenlerinin bireyselleştirilmiş eğitim program hakkında görüşlerinin belirlenmesi. [Determining opinions of teachers with mental retardation attending an education application school on the individualized education program]. *Abant İzzet Baysal Üniversitesi Eğitim Fakültesi Dergisi* 10(2):145-161.
- Demir H (1996). Zihin engelli öğrencilere düğme dikme becerilerinin kazandırılmasında model olma ve sözel ipucuyla sunulan bireyselleştirilmiş düğme dikme becerisi öğretim materyalinin etkisi. [Effect of materials for teaching sewing button skill by modelling and verbal prompting to teach button sewing skills to the students with intellectual disability] Unpublished Master's Thesis. Gazi University, Ankara. Turkey.
- Demirezen R (2006). Teknoloji eğitiminde zihinsel engelli öğrencilere döküm çamuru hazırlama becerilerinin kazandırılması üzerine bir araştırma. [Study on teaching casting dough preparation to the students with intellectual disability in technology education] Unpublished Master's Thesis. Gazi University, Ankara. Turkey.
- Dündar S (2002). Zihin engelli öğrencilerin öğretim programlarında günlük yaşam becerilerine yer verilme durumlarının belirlenmesi. [Determining inclusion of daily life skills to the education programs of students with mental disabilities] Unpublished Master's Thesis. Anadolu University, Eskişehir. Turkey.
- Dusseljee JCE, Rijken PM, Cardol M, Curfs LMG, Groenewegen PP (2011). Participation in daytime activities among people with mild or moderate intellectual disability. *Journal of Intellectual Disability Research*, 55(1), 4-18. (doi: 10.1111/j.1365-2788.2010.01342.x)
- Engelmann S (2003). The benefits of direct instruction: affirmative action for at-risk students. *Assoc. Supervision Curriculum Dev.* 57(1):77-79.
- Eratay E, Güler-Özkan A (2004). Goblen iğne kanaviçe işleme becerisinin kazandırılmasında fiziksel yardım ve sözel ipucu ile sunulan bireyselleştirilmiş öğretim materyalinin etkililiği. XIII. Ulusal Özel Eğitim Kongresi Bildirileri, [Effectiveness of individualized teaching material for teaching embroidery with tapestry needle to school age children and young individuals by physical assistance and verbal prompting] Ankara: Kök Yayıncılık pp.177-187.
- Erol N, Şimşek Z (2010). Okul çağı çocuk ve gençler için davranış değerlendirme ölçekleri el kitabı (CBCL, YSR ve TRF) [Behavior assessment Scales Handbook for school age children and young individuals (CBCL, YSR and TRF)]. Ankara, Turkey: Mentis Yayıncılık.
- Fischer M, Barkley R (2006). Young adult outcomes of children with hyperactivity: leisure, financial, and social activities. *Int. J. Disability Devel. Educ.*, 53(2): 229-245. (doi: 10.1080/10349120600716182).
- Glausier SR (1996). A recreation and leisure inventory development and application. (ED. 394 763). Rural goals 2000. Building programs that work.
- Gürkan-İşıl Ö (1994). Zeka özürü çocukların günlük yaşam aktivitelerine uyumunda annelere verilen eğitimin etkililiği [The effectiveness of training mothers in self-help skills activities for children with mental disabilities] Unpublished Doctoral Dissertations. İstanbul University, İstanbul. Turkey.
- Gürsel O, Ergenekon Y, Batu ES (2007). Gelişimsel geriliği olan bireyleri okuldan işe geçiş becerilerinin kazandırılmasına ilişkin öğretmenlerin ve yöneticilerin görüşleri. [Opinions of teachers and administrators on teaching skills for transition from school to work life for individuals with developmental delays] *Abant İzzet Baysal Üniversitesi Eğitim Fakültesi Dergisi* 7(2): 61-84.
- Hackensac NJ, Ithaca NY (1990). Supermarket careers. A partnership in training. Final report. (ED. 328 682). Washington DC: Bergen county vocational technical high school. Office of vocational and adult education.

- Halisküçük ES, Çiftçi-Tekinaslan I (2007). Zihinsel yetersizliği olan öğrencilere makarna pişirme becerisinin öğretiminde videoyla model olmanın etkiliği. [The effect of video modeling to children with mentally retarded on teaching ability of cooking macaroni]. *Abant İzzet Baysal Üniversitesi Eğitim Fakültesi Dergisi* 7(2):113-129.
- Hine LD, Hedlund DE (1990). Solitary and peer group leisure activities of rural adolescent. (ED. 384 481). Washington DC: Department of agriculture.
- Ho HK (1991). In service education needs of teachers working with the mentally retarded. *J. Spec. Educ.* 1(80),229-260.
- İlhan L (2008). Eğitilebilir zihinsel engelli çocuklarda bedeneğitimi ve sporun sosyalleşme düzeylerine etkisi. (Effect of physical education and sports on socialization level in trainable children with intellectual disability) *Kastamonu Eğitim Dergisi* 16(1):315-324.
- Jessup GM, Cornell E, Bundy AC (2010). The treasure in leisure activities fostering resilience in young people who are blind. *J. Visual Impairment Blindness*, July, 419-430.
- Kahn B (2002). The Hebrew academy for special children's summer program: An evaluation and social outcomes of developmentally disabled individuals. (ED 479 822). Washington DC: Special education programs.
- Kanchisar C (1990). Career education for mentally handicapped adolescent. *J. Career Dev.* 16(4):269-282.
- Karaküçük S (2005). Rekreasyon. boş zamanları değerlendirme. [Recreation. Making use of leisure time] 6. Baskı. Ankara, Turkey: Gazi Kitapevi.
- King G, Law M, Hurley P, Petrenchik T, Schweltnus H (2010). A developmental comparison of the out of school recreation and leisure activity participation of boys and girls with and without physical disabilities. *Int. J. Disability Dev. Educ.* 57(1):77-107. (doi: 10.1080/10349120903537988).
- King G, Lawm M, King S, Rosenbaum P, Kertoy MK, Young NL (2003). A conceptual model of the factors affecting the recreation and leisure participation of children with disabilities. *Phys. Occup. Ther. Pediatr.* 23(1):63-90.
- King G, Petrenchik T, Law M, Hurley P (2009). The enjoyment of formal and informal recreation and leisure activities: a comparison of school – aged children with and without physical disabilities. *Int. J. Disability, Develop.*, 56(2),109-130. (doi: 10.1080/10349120902868558).
- Köse E (2006). Özel eğitim gereksinimi olan çocukların gelişimine seramik eğitiminin etkisi. (Effect of ceramic training on the development of children with special education needs) Unpublished Master's Thesis. Gazi University, Ankara, Turkey.
- Lamarine RJ, Polkinghorne O (1990). Relationships between childhood and adult physical activity patterns in a community sample (ED. 331 818). Report Research Technical.
- Lambert A, Cruse D (1990). Considerations in assesment of leisure interests and needs of the adults mentally retarded. *J. Recreation Leisure* 10(1):75-86.
- Leon County Schools, Tallahassee, Fla. (1991). Curriculum for students with special needs. (ED. 349 431). Tallahassee FL: Florida state department of education, Tallahassee bureau of adult/ community education.
- Leyser Y, Cole KB (2004). Leisure preferences and leisure communication with peers of elementary students with and without disabilities .Educational implications. *Education* 124(4):595-604.
- Lionelle–De Nolf KM, Dube WV, Mcllvane WJ (2010). Evaluation of resistance to change under different distrupter conditions in children with autism and severe intellectual disability. *J. Exp. Anal. Behav.* 93:369-383. (doi: 10.1901/jeab.2010.93-369)
- McConkey R, Collins S (2010). The role of support staff in promoting in social inclusion of persons with an intellectual disability. *J. Intel. Disability Res.* 54(8):691-700. (doi: 10.1111/j.1365-2788.2010.01295.x)
- MEB (2002) Eğitim uygulama okulu eğitim programı.[The teaching program of teaching practice schools].Ankara,Turkey:Milli Eğitim Basimevi.
- MEB (2001). İlköğretim okulu orta düzeyde öğrenme yetersizliği (eğitilebilir) olan çocuklar programı.[Primary school program for children with mild intellectual disabilities].Ankara,Turkey:Milli Eğitim Basimevi.
- Melman S, Little SG, Akin-Little KA (2007). Adolescent over scheduling: The relationship between level of participation in scheduled activities and self-reported clinical symptomology. *The High School Journal*, February-March, 18-30.
- Merino R (2007). Pathways from school to work can the competences in leisure activities improve the construction of pathways?. *J. Educ. Work*, 20(2):139-159.
- Moon MS (1992). The community leisure facilitator. (ED. 369 204).Washington DC: Office of special education and rehabilitative services.
- North Carolina State Dept of Public Instruction, Raleigh (1998). Exceptional Children Facilities Plans. Sample Plans, Accessibility Guidelines. <http://www.schoolclearinghouse.org>.
- North Carolina University (1994). Employment Opportunities, Inc. Raleigh N.C.; Chapel Hill.Center for recreation and disability studies. Leisure education in supported employment. (ED. 385 040). Washington DC: Office of special education and rehabilitative services.
- O'Neill J (1990). Handbook for instructional staff: A curricular of adolescent with visual or dual sensory impairments and cognitive disabilities. (ED. 333 693).Washington DC:NewYork state education department. Albany. Office of the education of children with handicapping conditions. Office of special education and rehabilitative services.
- Özbey F (2005). Zihinsel engelli öğrencilere iş becerilerinin öğretiminde eşzamanlı ipucuyla öğretimin etkiliği. [The effectiveness of simultaneous prompting procedure on teaching vocational skill to students with mental retardation].Unpublished Master's Thesis. Abant İzzet Baysal University, Bolu, Turkey.
- Özen A, Acar Ç,Taviar Ö, Çetin Ö (2003). Özbakım becerilerinin öğretiminde ipucunun gidere kazatılmasıyla öğretim yönteminin etkiliği. [Effectiveness of Most to Least Prompting in teaching self-care skills] *Anadolu Üniversitesi Sosyal Bilimler Dergisi* 2(2):147-167.
- Özokçu O (1997). Zihin engelli çocuklara dikiş dikme becerilerinin kazandırılmasında model olma ve sözel ipucuyla sunulan bireyselleştirilmiş öğretim materyalinin etkiliği. [Effectiveness of individualized materials for teaching sewing skill by modeling and verbal prompting to teach sewing skills to the students with intellectual disability] Unpublished Master's Thesis. Gazi University, Ankara; Turkey.
- Paksoy S (2003). 8-12 yaş eğitilebilir zihinsel engelli çocukların resim-işçitimi. [Drawing-Art Education of age 8-12 trainable children with intellectual disability].Unpublished Master's Thesis. Marmara University, İstanbul; Turkey.
- Pawelko KA, Magafas AH (1997). Leisure well beingamong adolescent groups: Time, choices and self-determination. *Parks Recreation* 32(7):215-312.
- Peeters M, Verhoeven L, Balkom HV, Moor JD (2009). Home literacy environment characteristics of children with cerebral palsy. *Int. J. Lang. Commun. Disorders* 44(6):917-940. (doi: 10.3109/13682820802464759).
- Peniston LC (1994). Leisure advisement with the adult having learning disabilities.(ED. 376 421).Information analyses. Test evaluation instruments.
- Raghavan R, Newell R, Waseem F, Small N (2009). A randomized controlled trial of a specialist liaison worker model for young people with intellectual disabilities with challenging behavior and mental health needs. *J. Res. Intel. Disabilities* 22:256-263. (doi: 10.1111/j.468-3148.2008.00457.x)
- Randel M, Cumella S (2009). People with an intellectual disability living in an intentional community. *J. Intel. Disability Res.*53 (8):716-726.
- Ray T, Meidl D (1991). Fun futures: Community recreation and children with developmental disability. (ED. 339 183).St Paul: Minnesota governor's planning council on developmental disabilities.
- Reynolds F (2002). An exploratory survey of opportunities and barriers to creative leisure activity for people with learning disabilities. *British J. Learning Disabilities*, 30: 63-67.
- Rodger S, Brown TG, Brown A, Roever C (2006). A comparison of pediatric occupational therapy university program curricula in new zealand, Australia, and Canada, 26(1-2):153-180. (doi: 10.1080/J006v 26n 01_10).
- Rosenberg MS, Oshea L, Oshea DJ (1998). Student teacher to master teacher. A practical guide for educating student with special needs.

- Newyork: Merrill Publishing Company.
- Şabanova N (2000). Zihin engellilerle çalışan çocuk eğitimcilerine yönelik özbakım ve ev içi becerileri öğretim programının etkililiği. [Effectiveness of education program for teaching self-care and home skills for educators of children with intellectual disability] Unpublished Master's Thesis. Anadolu University, Eskişehir, Turkey.
- Salderay B (2001). Zihin engelli bireylerle çalışan özel eğitim öğretmenlerinin plastic sanatlar eğitimine ilişkin görüşleri. [Opinions of special education teachers working with individuals with intellectual disability on plastic arts] Unpublished Master's Thesis. Anadolu University, Eskişehir, Turkey.
- Sarı O (2003). 6-9 yaş zihin engelli çocukların annelerine özbakım ve bazı temel becerileri kazandırmak için bir eğitim programı. [Education Program for mothers of age 6-9 children with mental disabilities for teaching self-care and certain basic skills] Unpublished Master's Thesis. Marmara University, İstanbul, Turkey.
- Shaw SM, Kleiber DA, Caldwell LL (1995). Leisure and identity formation in male and female adolescents: A preliminary examination. *J. Leisure Res.* 27(3):245-263.
- Simons DF, Baron JA, Knicely KS, Richardson JS (2002). Online learning: perspectives of students and faculty in two disciplines-occupational therapy and teacher education. *Occup. Ther. Health Care* 14(2):21-52.
- Solish A, Perry A, Minnes P (2010). Participation of children with and without disabilities in social, recreational and leisure activities. *J. Appl. Res. Intellectual Disabilities.* 23: 226-236. (doi: 10.1111/j.1468-3148.2009.00525.x).
- Soto MT (1994). Improving cognitive skills in mentally handicapped preschoolersthrough the use of computer-based instruction and manipulatives. (ED. 379 818).Dissertations/Theses. Master of science practicum report, Nova University.
- Spencer-Cavaliere N, Watkinson EJ (2010). Inclusion understood from the perspectives of children with disability. *Adapt. Phys. Activity Quart.* 27:275-293.
- Stein M, Kinder D, Silbert J, Carnine DW (2006). Designing effective mathematics instruction. A direct approach. Forth Edition. New Jersey, USA:Pearson Education.
- Stevens-Ratchford R, Krause A (2004). Visually impaired older adultshome-based leisure activities: The effects of person-environment congruence. *J. Visual Impairment Blindness*, Jan. 14-27
- Suren A, Shermis M (1997). Youth intervention. (ED. 402 632). Bryan Hall:Research & creative activity, office of research and the university graduate school. Indiana University, Bryan Hall 104, Bloomington. ([http://www.indiana.edu/~\[tilde\]rugs/rca/toc.html](http://www.indiana.edu/~[tilde]rugs/rca/toc.html))
- Tekin-İftar E, Kırcaali-İftar G (2004). Özel eğitimde yanlışsız öğretim yöntemleri, (Errorless teaching procedures in special education) Ankara, Turkey: Nobel Yayın Dağıtım.
- Temple VA, Walkley JW (2003). Physical activity of adults with intellectual disability. *J. Intellectual Develop.Disability*, 28(4): 342-353. (doi: 10.1080 / 136682503 10001616380).
- Tezcan M (1994). Boş zamanların değerlendirilmesi sosyolojisi. [Sociology of making use of leisure time] 4. Baskı. Ankara, Turkey: Atilla Kitapevi.
- Topsakal M (2004). Zihin özürlü çocuklara oto yıkama becerisinin öğretimine hata düzeltmesi yapılarak gerçekleştirilen eşzamanlı ipucuyla öğretimin etkililiği. [Effectiveness of simultaneous prompting with error correction for teaching car washing skills to children with mental disability] Unpublished Master's Thesis. Anadolu University, Eskişehir, Turkey.
- Trenberth L, Dewe P (2005). An exploration of the role of leisure in coping with work related stress using sequential tree analysis. *British J. Guid. Counsel.* 33(1):101-116. (doi: 10.1080/03069880412331335885).
- Trenberth L (2005). The role, nature and purpose of leisure and its contribution of individual development and well-being. *British J. Guidance and Counseling*, 33(1): 1-6. (doi: 10.1080/03069880412331335849)
- Vandercock T (1991). Leisure instruction outcomes: Criterion performance, positive, interactions, and acceptance by typical high school peers. *J. Special Educ.*, 25(3):320-339.
- Verdonshot MML, Witte LP, Buntinx WHE, Curfs LMG (2009). Community participation of people with an intellectual disability: a review of empirical findings. *J. Intellectual Disability Res.* (4):303-318.
- Vuran S (2008). Empowering leisure skills in adults with autism: An experimental investigation on through the most to least prompting procedure. *Int. J. Special Educ.* 23(1):174-181.
- Vuran S, Vuran S, Bakar S (2001). Zirem seramik atölyesi çalışmaları. 10. Ulusal Özel Eğitim Kongresi Bildirileri. [Zirem Ceramic workshop activities. 10th National Special Education Congress Papers] Hatay, Turkey: İkiz Ofset, pp. 207-214.
- Wendelborg C, Kvello Q (2010). Perceived social acceptance and peer intimacy among children with disabilities in regular schools in Norway. *J. Appl. Res. in Intellectual Disabilities*, 23: 143-153. (doi: 10.1111/j.1468-3148.2009.00515.x)
- Whorton JE (1994). A comparison of leisure and recreational activities for adults with and without mental retardation.(ED. 369 606).Diane Montgomery. (Ed.) Rural partnerships: working together .Proceedings of the annual national conference.
- Wu RTY (2004). Teaching support measures for secondary vocational teachers teaching mentally retarded students in Taiwan, Republic of China. Presented papers: International congress for school effectiveness and improvement conference. Rotterdam, The Netherlands. January 6-9. 2004.
- Yalon-Chamovitz S, Mano T, Jarus T, Weinblatt N (2006). Leisure activities during school break among children with learning disabilities: Preference v.s. Performance. *British J. Learning Disabilities*, 34: 42-48. (doi: 10.1111/j.1468-31562005.00335.x).
- Yücesoy Ş (2002). Zihin özürlü öğrencilere fotokopi çekme becerisinin öğretiminde eşzamanlı ipucuyla öğretimin etkililiği. [The effectiveness simultaneous prompting on teaching photo copy skills to students with mental disabilities].Unpublished Master's Thesis. Anadolu University, Eskişehir, Turkey.
- Zijlstra HP, Vlaskamp C (2005). Leisure provision for persons with profound intellectual and multiple disabilities: Quality time or killing time. *J. Intellectual Disability Res.* 49(6):434-448. (doi: 10.1111/j.1365-2788.2005.00689.x).

Appendix

Table 1. Activities included in the leisure time activity program.

Activities	Applying Individual
Glass Painting	Handcrafts teacher
Marbling Art	Handcrafts teacher
Fabric Dyeing	Handcrafts teacher
Ornament Works	Handcrafts teacher
Wood Painting	Handcrafts teacher / Postgraduate students
Natural Fruit and Tea Infusion	Postgraduate students
Making Cookies	Postgraduate students
Making Milkshake	Postgraduate students
Making Lemonade	Postgraduate students
Making Orange Juice	Postgraduate students
Taking Photographs	Postgraduate students
Making Candles	Postgraduate students
Making Bookmarkers	Postgraduate students
Kid Crafts	Postgraduate students / Author
Making Wedding Candies	Author
Making a Rose with a Paper Napkin	Author
Making a Frame	Author
Making a Doll	Author
Practical Drawing	Author