

Study of the Effectiveness of Social Skills Training on Social and Emotional Competence among Students with Mathematics Learning Disorder

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Introduction: the objective of the study was to determine the effectiveness of life skills training on social and emotional competence of students with mathematics learning disorder. **Materials and Methods:** in this study, 40 students with mathematics learning disorder were randomly selected in two groups including experimental and control. Key math test and Felner social competence questionnaire were used for data gathering. Intervention group was trained by life skills in eight sessions within one month. At the same time, control group was not trained. The students of both groups filled Felner social competence questionnaire before and after training. Then, the data were analyzed by multi-variant variance analysis test. **Findings:** the results showed that life skills training significantly improved social and emotional competence among the students with mathematics learning disorder. **Conclusion:** life skills training improved social and emotional competence among the students with mathematics learning disorder and can be used as an appropriate approach for the improvement of children's social and emotional competence in learning disorder schools.

Keywords: Mathematics Learning Disorder; Social Skills; Social Competence; Emotional Competence

Introduction

Children with learning disability face serious problem in one or some of learning abilities like reading, writing and mathematics (Vaughn & Sinagub, 1998). Unfortunately, despite having appropriate IQ, they have low self-esteem and self-concept due to not enjoying life skills and hence, they do not exhibit a convincing performance (Rourke & Del Dotto, 1994). It is crucially important that only considering specific reading, writing and mathematics trainings and ignoring the importance of social relations limits our understanding of the significance of the problem and our attempts to help them in improving their skills (Bryan, 1998). The outbreak rate of mathematical learning disability has been estimated as 1% of students, while Hamid (2006) reported it as 3.6% in Tehran. They face such emotional threats as depression and suicide at older ages. According to Bruno (1981) these children have problem in predicting behavior sequence and selecting optimum and appropriate behavior in dealing with different issues compared with their coevals who do not have learning disability. Verner and Pearl (1982) showed that when learning disabled children were stressed by their coevals, they exhibit abnormal responses.

Emotional problems can create much anxiety by altering mental balance which is followed by consuming medications, depression, sexual misbehavior and suicide (Dadsetan, 1997). According to Meadus (2007), depression, anxiety and stress are the main emotional problems among teenagers which can dis-

rupt their social interactions and educational progress.

According to Shomaker (1979), although the problems among children with learning disorder are not always associated with social competence and they have appropriate skills and performance in this field, they are not completely homogenous and according to Akerman (1979), although these children can understand positive behaviors, they have problem in decision-making and selecting a behavior and using it in social interactions compared with their coevals. Shomaker (1982) proved their disability in problem-solving, therefore by looking at social competence among students with learning disability, we can see that they have serious problems in leaving school (according to Ulman, 1957), delinquency (according to Roff, 1972) and mental problems (according to Cowen, 1973). In addition, according to White (1980), they face problems in their academic studies at older ages and are less successful in their jobs than their coevals. Moreover, Gresham (1981) showed that success in social interaction requires social competence. Children with poor social behavior encounter such problems as coeval rejection, behavioral problems and lower education status when entering school. McClell and Morrison (2003) indicated that 50% of children who enter kindergarten do not the minimum requirements for better performance such as the ability of following a given direction, independent performance and educational skills. McClell and Holmes (2000) showed that there were significant relations between social competence and such variables as social desirable behaviors and relations with coevals, suitable behavior in classroom and adaptation to school.

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Social skills are a set of mental, social and interpersonal skills which help a person to deliberately make decisions and to have good communicative, cognitive and emotional skills with a healthy and productive life (WHO, 1993). The researches show that life skills training can make significant results in various aspects of students' mental and behavioral health. Kahrazi et al. (2003) showed the effectiveness of problem-solving skills training in emotional competence such as the decrease in depression among the students. In addition, Turner and Forneris (2007) indicated that life skills training can help problem-solving and using social supports. Therefore, social skills training are clearly important in improving social and emotional competence among children and its effects have been proved by many researches.

The objective of the current research was to study the effects of life skills training on social and emotional competence among a special group of children, i.e. children with learning disability because this kind of research is rare and it is important to deeply study the different aspects of mental health among these children.

Materials and Methods

The statistical society of the study included all students with learning disability in elementary schools, fifth grade in Ardabil, Iran in 2009 (n = 140) (quoted from Ardabil Learning Disability School, 2009).

In this quasi-experimental research, 40 students were selected from Learning Disability School and were randomly divided into two groups, 20 as control and 20 as test. The following tools were used in data gathering:

- Key math test: the test was normalized by A. J. Konolly in 1988. It includes 13 subscales to determine the students' strengths and weaknesses in different fields of mathematics. It has been normalized for the students with the ages of 6.5 - 12.8 years in Iran (Mohammad-Ismail & Hooman, 2003). Its final coefficient is .8.
- Raven IQ test: it was constructed by Raven for the age group of 9 - 18 years and includes 90 items. Its average internal consistency coefficient is .98 and its average reliability coefficient is .82. Its validity coefficient has been determined as .70 - .90 for different age groups and slightly lower for younger ages. Its correlation with other intelligence tests such as Vexler, Stanford-Binet, Proteus and Goode-nough has been obtained as .40 - .75. It has significant correlation with other non-verbal tests (Aghayi, 1997, quoted in Abbaszadeh Ganji & Shirzad, 2003).
- Felner social competence scale (1990): it was built on the basis of Felner theory. It includes 47 items and measures four aspects of cognitive skills and capabilities, behavioral

skills, emotional competence, motivation sets and expectation. Its reliability coefficient with Cronbach's Alpha coefficient is .88 and its retest reliability coefficient (after one month) is .89. In Iran too, these four factors were confirmed by factor analysis. In addition, its validity was studied by factor analysis and KMO was determined as .83.

Conducting Method:

The samples were trained about life skills in eight sessions during one month. For teaching life skills to the fifth-grade students, Vernon curriculum was used which includes four fields of self growth, social growth, emotional growth and cognitive growth. One month later, questionnaires were filled out by both groups and then, the data were analyzed by MANOVA.

Data Analysis Method: to analyze the data, statistical and descriptive methods (mean and standard deviation) and MANOVA (multi-variant variance analysis) were used. Statistical Package for Social Science (SPSS Ver. 14) was used in statistical analysis.

Findings

According to demographic findings, the average age of subjects was 11.83 with standard deviation of .39 (it was 11.85 with standard deviation of .36 in experimental group and 11.8 with standard deviation of .41 in control). The subjects in experimental group included 6 boys and 14 girls and in control group, 15 boys and 5 girls. Among parents, 8% of fathers and 16% of mothers were illiterate, 18% of fathers and 10% of mothers were educated at elementary schools, and 6% of fathers and 11% of mothers were educated at intermediate schools or high schools (in both experimental and control group). Average age of fathers was 44 and 42 in experimental group and that of mothers was 36 and 35 in control group.

Mean emotional competence score of test group was greater than that of control after training. Mean cognitive skill, motivation and expectation scores of test group were greater than those of control after training (**Table 1**).

Discussion and Conclusion

In the current study, life skills training improved social and emotional competence among students with learning disability, so that after social skills training, the cognitive skills among students of test group were significantly increased compared with control ($P < .001$) and motivation of test group was significantly increased compared with control ($P < .001$); in addition, the expectation of test group was significantly increased compared with control ($P < .001$). Emotional competence of test group was significantly increased compared with control after social skills training, too ($P < .001$) (**Table 2**).

Table 1.

Mean and standard deviation of emotional and social competence in two test and control groups.

Variable	Position	Experimental group		Control group	
		\bar{X}	SD	\bar{X}	SD
Emotional competence	Pre-test	1.7	2.07	9.40	3.31
	Post-test	8.9	3.6	9.85	3.50
Cognitive skills	Pre-test	9.95	4.03	12.43	2.83
	Post-test	12.24	3.58	10.02	2.72
Motivation	Pre-test	123.3	9.23	122.65	8.94
	Post-test	135.13	6.19	119.43	12.62
Expectation	Pre-test	27.22	5.85	26.35	6.13
	Post-test	31.4	4.52	27.05	5.16

Table 2.

Results of significance test of multi-variant variance analysis of emotional and social competence marks in both test and control groups.

Variable	Total squares			df			Means of squares			F	Significance level
	Group	Error	Total	Group	Error	Total	Group	Error	Total		
Emotional competence	18.22	140.15	209	1	38	40	18.22	3.68	-	4.94	.03
Cognitive skill	172.22	601.55	775	1	38	40	172.22	15.83	-	11	<.002
Motivation	128.22	7934.55	14675	1	38	40	1288.22	-	-	6.17	<.018
Expectation	122.5	183.4	546	1	38	40	122.5	5	-	25.38	<.001

The results of the current study are consistent with many previous studies on the intervention in social and emotional competence among students with learning disability, so that Hazel (1982) increased behavior level by selecting educational method in small groups of students with learning disability. La Greca (1981) noted that the social skills were well elevated after 6-week training in children with learning disability.

After social competence training, Larson and Gerber (1987) reported that the groups with learning disability were not more successful in improving their behavior than groups without this disability. In his training interventions towards social skills training to children with learning disability, Merz (1985) observed no significant curing effect on social interactions and communication. However, in his training interventions on children with learning disability, Northcutt (1987) although observed improvements in behavior, they were not significant. In his study on social skills training, Nabors (2000) observed the mitigation of aggression and depression and improvement of self-confidence, adaptation skills and responsibility. According to Turner et al. (2002), life skills training can improve children social supports. Also, Jeffery (2002) reported that life skills training can reduce stress and anxiety. According to Hajamini et al. (1999), life skills training obviate stress, anxiety and emotional responses among teenagers. Considering the effects of life skill training on the improvement of social and emotional competence among children with mathematics learning disability and its positive effects observed in other studies, it is necessary for training centers of children with learning disability to plan and conduct social life skills at elementary level in accordance with WHO recommendations as well as cultural and environmental structure of the society because according to Hontington (1993), ignoring life skills training to the students with learning disability can put them in the risk of suicide and depression at older ages.

One limitation of the study included the lack of social skills training programs with standard content, so that different training contents and methods have been used for social skills training in previous studies. Another limitation was the impossibility of studying the long-term results such as significant changes in health and social behaviors, the permanence of produced changes and the improvement in education career. So, it is suggested to use wider samples and longer periods in future studies in order to study medium and long-term effects as well as the permanence of produced changes.

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