



DETERMINATION OF THE PROBLEM SOLVING LEVEL OF GIFTED/TALENTED STUDENTS

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ABSTRACT

It is important to determine and develop problem solving skills of gifted and talented children, who have different emotional characteristics compared to peers, in terms of using their potentials at the highest level. In this research, which was done with the aim of determining self sensations of gifted and talented children in problem solving skills, it was examined if gender and grade level variables create differences on sensations for problem solving skills of gifted and talented children. The study group of research that was done by using Survey method is made up of 100 students who attended Sivas Science and Art Center in spring term of 2010- 2011 Education year. As a data collecting tool in study, "Problem Solving Inventory for Children" that was developed for primary school students by Serin, Bulut Serin & Saygılı (2010) was used. Inventory (ÇPÇE), its Cronbach alpha reliability coefficient is 0.80, is made up of three factors, "Confidence", "Self-control" and "Avoidance" and 24 items in total. Collected data was analyzed by using SPSS 12.00 programme. In this context, "t", "F", "scheffe" tests and "correlation analysis" were applied. As a result of study, according to the findings, it wasn't found any significant differences between total point of gender, grade levels, problem solving skill sensation and point averages of subscales.

Keywords: problem solving, gifted/talented students

INTRODUCTION

The thing that makes individuals unique is their distinctive characteristics. Being gifted is a product of general abilities, personal thought and motivation (Feldhussen, 1986). However, it is called gifted person who shows high performance or has potentiality in most of mental abilities or intelligences compared to peers, has a strong creativity and never gives up when he/ she starts a task (Ataman, 2003). Gifted students show different emotional characteristics in addition to mental and social characteristics compared to other students (Clark, 1997). If these students' educations are left up to chance, it can be caused them to develop disadvantageously (Cutts ve Moseley, 2001). Not to lose gifted individuals who are in a limited number, it is necessary that environment and opportunities which are need for their education life should be provided (Çapan, 2010: 141). Firstly, improving individual's abilities systematically and in a programmed way is necessary for using individual's ability more effectively (Renzulli, 1999).

One of the distinctive characteristics that distinguish gifted or talented children who compose %2 of society from their peers is their problem solving skills (Enç, 2005). Problem solving skill is cognitive, affective and social abilities which individual use them in the process of overcoming difficulties they encounter in achieving a goal. (Bingham, 2004). These skills are acquired in development periods and have effects on social adaptation of an individual and success for daily life. (Arenofsky, 2001). These provide for a child to overcome his/her own difficulties. In other words, these teach a child to know what should be done in cases he/she doesn't know what to do, to choose equipments for reaching a goal he/she plans, to make plans, to follow progress of a plan (Altun, 2000). Problem solving process includes a range of efforts from realizing the problem to solving it. Problem solving skill of an individual is significantly affected by personal experiences, personality traits, attitudes and morals. (Güçlü, 2003: 273-276). Core knowledge, skills and habits the child will acquire in early ages by means of problem solving experiences shape social and emotional life in addition to later education life (Arı, 2003). So, the main goal is to get overcoming skill to students so that they solve when they encounter other problems out of school life (Kalaycı, 2001:41).



As understood from these explanations, problem solving skills, which help students to overcome difficulties well they encounter, are seen an effective way for improving individual abilities. Determining in which level gifted children have these abilities that can be learned or improved and especially are seen as a necessary to be acquired in early ages has a key importance in terms of enhancing education quality given them in addition to improving these skills in children. In this study, which was done to determine self- sensations of gifted and talented children in the matter of problem solving skills, it was examined the effect of several variables on gifted and talented children's sensations for problem solving skill.

The Study

The aim of this study is to examine if gender and grade level variables create differences on sensations for problem solving skills of gifted and talented children. Dependent variable of study is "problem solving skill" and independent variables are "gender" and "grade level". The study group of research that was done by using Survey method is made up of 100 students who attended Sivas Science and Art Center in spring term of 2010- 2011 Education year. As a data collecting tool in study, "Problem Solving Inventory for Children (PSIC)" was used to determine self- sensations of gifted and talented children in the matter of problem solving. Inventory, which was developed by Serin, Bulut Serin ve Saygılı (2010) for testing self-sensation level related to problem solving skill of primary school students, to test problem solving approaches and behaviours, consists of three factors "Confidence to Problem Solving Skill" (12 items), "Self-control" (7 items) ve "Avoidance" (5 items) and 24 items totally. Cronbach alpha reliability coefficient of scale is .85. ÇPÇE, 5 point likert scale which is marked between 1-5, is a self-evaluation scale that test self-sensation of an individual about the problem solving skills. Point range is 24-120. When the points are calculated, points that belong to items which take place completely in second (18, 19, 20, 21, 28, 49, 58) and third (41, 43, 59, 62, 64) factors and reflect self- control and avoidance were reverse coded. Total points' level that was received from scale shows that individuals have an enough self-sensations for problem solving matter.

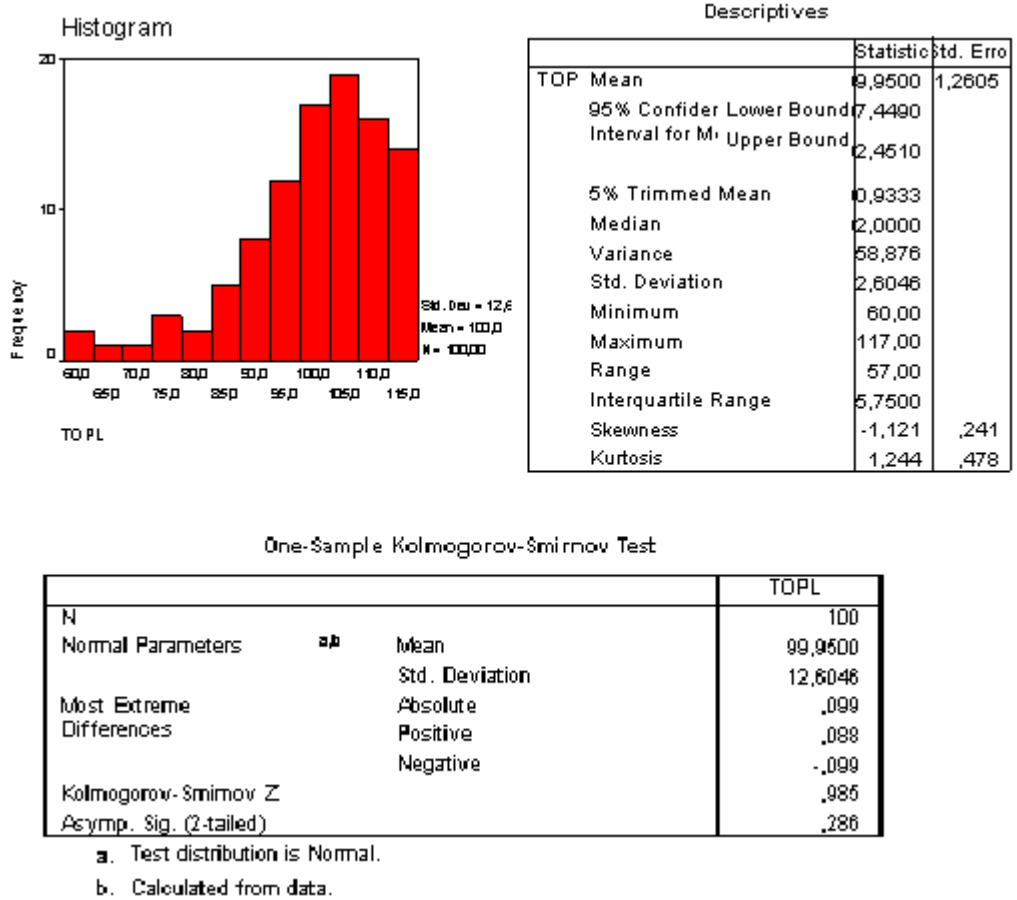
Table 1: Sample Introductory Findings

Independent variables	n	%
Gender		
Female	53	53.0
Male	47	47.0
Class		
3	31	31.0
4	24	24.0
5	28	28.0
6	17	17.0

As seen in Table 5, sample consists of 53.0% (53) female and 47.0% (47) male. 31% of sample is at 3th grade, 24% is at 4th grade, 28% is at 5th grade and 17% is at 6th grade.



Table 2: The sample is suitable for normal distribution or not



SPSS 12.00 programme was used for statistical analysis of collected data from testing tools that was used in study. Significance level was accepted as .05 in interpretation of collected data. (Büyüköztürk, 2004). In study, it was examined if there is a relation between independent and dependent variables. To determine if there is a difference between groups, for dichotomous variables “t” test, for more than two variables “F” test and to determine from which variables the difference arise “scheffe” test were applied. Correlation analysis was applied to examining the relation between subscales. Collected data was shown in Tables below.

Table 3: Problem Solving Scale According to Age of Sample and Point Averages and Standart Deviation from Subscales

		n	X	ss	t	p
CONFIDENCE	GENDER					
	Male	53	50,6604	6,7023	.622	.535
	Female	47	49,8085	6,9802		
SELF-CONTROL	Male	53	27,4340	5,5833	.257	.798
	Female	47	27,7234	5,6711		
AVOIDANCE	Male	53	22,3774	3,0898	.937	.351
	Female	47	21,8298	2,7052		
TOTAL PS	Male	53	100,4717	12,7470	.438	.663
	Female	47	99,3617	12,5532		



As seen in the table, there is not a significant difference between gender and confidence in problem solving, self- control, avoidance, total problem solving points ($p > .05$).

Table 4: Problem Solving Scale According to Categories of Sample and Point Averages and Standard Deviation from Subscales

Grade		CONFIDENCE	SELF-CONTROL	AVOIDANCE	TOTAL
3	X	50,3871	28,1613	21,6129	100,1613
	N	31	31	31	31
	SS	6,8297	6,6888	3,6668	14,3157
4	X	51,1250	28,1250	22,7917	102,0417
	N	24	24	24	24
	SS	7,3266	4,1631	2,5191	12,4219
5	X	49,6071	26,1429	21,8214	97,5714
	N	28	28	28	28
	SS	6,8710	5,6484	2,7224	12,2639
6	X	49,8824	28,0588	22,5882	100,5294
	N	17	17	17	17
	SS	6,3922	5,1292	2,0328	10,3085

Table 5: Problem Solving Scale According to Categories of Sample and ANOVA Results Related to Points from Subscales

		Sum of squares	sd	Average of squares	f	P
CONFIDENCE	Intergroups	32,817	3	10,939	,230	,875
	In-groups	4562,423	96	47,525		
	Total	4595,240	99			
SELF-CONTROL	Intergroups	79,322	3	26,441	,840	,475
	In -groups	3023,188	96	31,492		
	Total	3102,510	99			
AVOIDANCE	Intergroups	25,022	3	8,341	,982	,405
	In -groups	815,538	96	8,495		
	Total	840,560	99			
TOTAL	Intergroups	270,506	3	90,169	,560	,643
	In-groups	15458,244	96	161,023		
	Total	15728,750	99			

As seen in table, it wasn't seen a significant difference between grade level and confidence in problem solving, self- control, avoidance, total problem solving points($p > .05$).

Table 6: Correlation Rates between Problem Solving Skills and Subscales

SUBSCALES	x	Ss	n
CONFIDENCE	50,2600	6,8130	100
SELF-CONTROL	27,5700	5,5981	100
AVOIDANCE	22,1200	2,9138	100
TOTAL	99,9500	12,6046	100

		Confidence	Self-control	Avoidance
CONFIDENCE	r			
SELF-CONTROL	r	,411		
AVOIDANCE	r	,503	,653	
TOTAL	r	,839	,817	,793



When the relation between subscales of problem solving skills scale was analyzed, it was found a positive relation between self-control($r=411$) and avoidance($r=503$) points, also a positive relation between self-control and avoidance ($r=653$).

CONCLUSIONS

As a result of study, it wasn't found a significant difference between gifted students' grade level, gender and confidence, self-control, avoidance and total problem solving points. Finding of this study shows a similarity to results of Heppner ve Peterson (1982); Taylan (1990); Çam (1997) Güven and Akyüz (2001); Serin (2001); Saracaloğlu, Serin and Bozkurt (2002) who examine the problem solving skill sensations in terms of gender variable. When the studies are generally assessed that were applied on several sample groups about problem solving skills inside and outside Turkey, it is seen that these skills are discussed for analysing most of issues. However, in applied studies, it stands out that the number of quantitative researches, university students take place, are more than the number of researches by which primary school students' problem solving skills are examined. If we analyze the results of study in terms of problem solving skill that is the dependent variable of research, generally it is seen that these skills attribute to social and emotional improvement of an individual. In this context, in improving of Senemoğlu (2001), creativity skill; Saygılı (2000), pluckiness skills; Albayrak (2002), responsibility emotion; Yazıcı (2001), confidence emotion indicate the significance of problem solving skills. However, applied researches show that most of the gifted students may have emotional problems, change into students who have problems, especially in terms of learning in school environment, their extraordinary abilities may die out if it isn't defined in early ages and provided suitable education opportunities (Philip, 1977). So, it should be concentrated on education applications that will serve improving problem solving skills. In different issues or study groups, effect of several variables on problem solving skills may be determined experimental studies. In this context, there are studies (Dinçer, 1995; Güner, 2007; Korkmaz, 2002) which determine a positive increasing in problem solving skills of students who included application after experimental procedure. However, it may be emphasized determining lower and higher groups in terms of problem solving skills, qualitative and quantitative researches with students who compose these groups, giving necessary importance and time to improve these skills in education programmes.

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