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## Analyzing pre-school education parents' problem solving skills with regard to biological and gender characteristics

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### Abstract

Problem solving is the act of giving a decision about a problem. The act of giving a decision is used at the stages of individual's realizing the problem, gathering information, determining alternatives, testing the most appropriate alternative and evaluating the results. Bem stated that in problem solving and being able to cope with problems social gender is a major factor. In this study; gender characteristics and problem solving skills of the mothers and fathers of the children who are having preschool education have been analyzed. Furthermore, whether these fathers' and mothers' problem solving skills differentiate or not with regard to biological gender and social gender have been analyzed. Working group of the study; 248 parents whose children are having pre-school education.. According to the findings of the study, there is no significant difference on parents' perceptions related to their problem solving skills with regard to their biological gender. However their perceptions related to their problem solving skills differentiate at significant level with regard to their social gender roles.

*Keywords:* early childhood, gender, parent, problem solving

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### 1. Introduction

Problem solving is an act of decision making, which consists of the following stages: recognizing and identifying a situation on which a decision should be made; collecting information about this situation and defining the alternatives; investigating, analyzing and evaluating these alternatives; choosing the alternative that will create the most positive and effective results for the individual's life and executing it; assessing the consequences and –if necessary- making a new selection; and getting feedback from the immediate social environment about the selection (Germeijs and Boeck, 2003; Gelatt, 1989; Marco, Hartung, Newman and Parr, 2003; Sardoğan, Karahan and Kaygusuz, 2006). Problem is a condition of conflict where the individual faces an obstruction on the way of achieving a goal. This obstruction makes it difficult to achieve the goal (Morgan,1999). Heppner and Krouskopf (1987) define problem solving as the cognitive and effective behavioural processes an individual carries out in order to attain a harmony between the complex internal and external desires. The problem solving skill is acquired in all areas of the life. It is acquired firstly in the preschool period through the guidance and assistance of the family and the environment, and it continues throughout one's life after it is given a certain systematic at the school (Kurtyılmaz, 2005). The attitudes presented by parents in problem solving influence children's problem solving

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skills (Genç and Kalafat, 2007; Forgatch, 1989; Tallman, 1970). Parents' problem solving skills play significant roles in the development of these skills in their children. In solving and coping with problems, gender is an important factor (Bem, 1975, Bem & Lenney, 1976, Spangenberg & Lategan, 1993, Vang, 2006). Since parents' problem solving skills and gender personalities are deemed influential in the development of children's problem solving skills; the gender personalities and problem solving skills of the parents of preschool children were investigated in this research. Besides, it was explored whether the problem solving skills of these parents differ with respect to their sexes and gender personalities.

Research objective: The aim of the research is to determine the sexes and gender personalities of parents of preschool children, and to investigate whether these personalities have an impact on their problem solving skills. For this purpose, answers were sought to the following questions: What sex and gender personalities do parents of preschool children have? What problem-solving skills do these parents possess? Do their problem solving skills differ with respect to their sex and gender characteristics?

## 2. Method

This section includes information about the model, universe and sample of the research, data collection instruments and about the statistical methods employed in the analysis of the collected data.

### 2.1. Study Group

The study group of the research consisted of 248 parents (132 mothers and 116 fathers), whose children receive preschool education and who volunteered to participate in the research. Of the parents, 14% are elementary school graduates, whereas 27% are high school graduates, 15% are associate degree holders, 33% are university graduates and 6% are postgraduate degree holders. According to the Bem Sex Role Inventory, 68% of the parents exhibit "feminine", 59% "masculine", 67% "androgynous" and 54% "undifferentiated" personalities.

### 2.2. Data Collection Instrument

In the research, the Bem Sex Role Inventory and the Problem Solving Inventory were employed as data collection instruments.

#### 2.2.1. Bem Sex Role Inventory :

Bem Sex Role Inventory was developed by Bem (1974). It was adapted into the Turkish society by Kavuncu (1987) and test-retest reliability was found to be .75 for femininity (F) and .89 for masculinity (M). Each of the femininity and masculinity scales consists of 20 items. Items are administered in a mixed order and as a single scale. Individuals score this items from (1): Never true to (7) Always true; in order to rate the extent these items describe them. Two different scores are obtained from the masculinity and femininity scales. Based on the medians of these scores, the sex role (feminine, masculine, androgynous or undifferentiated) of the individual is determined. Those with a femininity score above the femininity median and a masculinity score above the masculinity median are defined as androgynous; those with a femininity score below the median and a masculinity score above the median are masculine; those with a femininity score above the median and a masculinity score below the median are feminine; and finally, those with both scores below the medians are considered to have undifferentiated sex role. Psychometric characteristics of the Bem Sex Role Inventory Femininity and Masculinity Scales Turkish Form were studied by Dökmen (1999). F's alpha coefficient and split-half coefficient were found to be .73 and .76 (N=989), respectively. On the other hand, M's alpha coefficient and split-half coefficient were found to be .75 and .75 (N=989), respectively. For all participants (N=1762), F score median was found to be 111 (5.55, according to the mean score) and M score median was found to be 104 (5.20, according to the mean score). After conducting analyses, it was concluded that using the medians suggested as norms for researches as 111 (5.55) for F and 104 (5.20) for M to be reliable. In this research; feminine, masculine, androgynous and undifferentiated sex personalities were defined based on the medians determined by Dökmen (1999) for F and M.

### 2.2.2. Problem Solving Inventory:

Problem Solving Inventory was developed by P.P. Heppner and C. H. Peterson. The main characteristic that the scale measures is the self-perception of the individual about her own problem solving skills. It is selected since it is an easy-to-use scale individuals can administer on their own. It consists of 35 six-point Likert-type items. For each item, individuals are asked to indicate how often they behave in the ways specified by the scale items: “Always”, “Usually”, “Often”, “Sometimes”, “Rarely” and “Never”. Responses are given points between 1 and 6. During scoring, the items 9, 22 and 29 are excluded. On the other hand, items 1, 2, 3, 4, 11, 13, 14, 15, 17, 21, 25, 26, 30 and 34 are scored inversely. These items are assumed to represent competence in problem solving skills. High scores obtained from the scale suggest that the individual perceives herself as incompetent in terms of problem solving skills (Savaşır and Şahin, 1997).

## 3. Findings and discussion

1. In the research, firstly, the sex and gender personalities of parents of preschool children were explored. Data obtained for this purpose were converted into crosstabs and presented in Table 1.

Table 1. Distribution of Parents in terms of Sexes and Gender Personalities

		Gender				Total
		Feminine	Masculine	Androgynous	Undifferentiated	
Sex	Female	58	12	34	28	132
	Male	10	47	33	26	116
Total		68	59	67	54	248

Table 1 shows that “Female” (132) parents mostly exhibit “Feminine” (58) gender personalities, followed by “Androgynous” (34), “Undifferentiated” (28) and “Masculine” (12), respectively. On the other hand, “Male” (116) parents exhibit the following gender personalities: “Masculine” (47), “Androgynous” (33), “Undifferentiated” (26) and “Feminine” (10). In other words, the gender personality that is in line with the biological sex ranks first among the gender personalities of parents of preschool children (feminine females and masculine males). On the other hand, the gender personality that is directly opposite to the biological sex ranks last (Female-Masculine, male-Feminine). Aydın (2009) similarly found that the gender personality that is compliant with biological sex ranks first among gender personalities. In Damarlı’s (2006) study carried out with adolescents, a parallel result was obtained. Kızılaslan and Diktaş (2011), on the other hand, explored the distribution of gender personalities with respect to biological sex and found that the “undifferentiated” gender personality ranks first in both sexes. It is then seen that the results obtained in this research pertaining to gender distribution with respect to biological sex are in parallel with the findings of other studies in the literature.

2. How are the problem solving skills of parents of preschool children with respect to biological sexes and gender personalities?

Table 2. Descriptive statistics of parents’ problem solving scores with respect to their “sex” and “gender” characteristics

		Biological Sex							
		Female			Male			Total	
Gender	n	$\bar{X}$	s	n	$\bar{X}$	s	n	$\bar{X}$	s
<b>Feminine</b>	58	133,91	13,26	10	131,50	15,79	68	133,56	13,56
<b>Masculine</b>	12	140,92	16,89	47	140,06	12,30	59	140,23	13,20
<b>Androgynous</b>	34	136,73	14,64	33	139,79	17,47	67	138,24	16,05
<b>Undifferentiated</b>	28	132,36	13,73	26	128,38	17,24	54	130,44	15,50
<b>Total</b>	132	134,95	14,12	116	136,63	15,97	248	135,73	15,00

Table 2 shows that the problem solving skill mean scores of feminine ( $\bar{X} = 133,56$ ) and undifferentiated ( $\bar{X} = 130,44$ ) parents are lower than those of masculine ( $\bar{X} = 140,23$ ) and androgynous ( $\bar{X} = 138,24$ ) parents. In terms

of problem solving skills, the group whose self-perception is most competent is those parents exhibiting “undifferentiated” gender personality and the group whose self-perception is least competent is those parents who exhibit “masculine” gender personality. It is shown by the table that parents’ self-perceptions are ranked as follows: “undifferentiated”, “feminine”, “androgynous” and “masculine”. It is also seen that female parents’ problem solving skill mean score ( $\bar{X}=134,95$ ) is lower than that of male parents ( $\bar{X}=136,63$ ); which indicates that female parents perceive themselves more competent in problem solving than male parents (The higher the problem solving inventory score, the less competent the person perceives herself in problem solving). This finding supports the findings of Polat (2008), Karataş (2011), and Sezen and Paliç (2011).

3. Do the parents’ problem solving skills differ with respect to their sex and gender characteristics?

Table 3. ANOVA results of parents’ problem solving skills with respect to their sex and gender characteristics

Source of Variance	Sum of Squares	sd	Mean of Scores	F	p	Significant Difference
Sex	49,270	1	49,270	0,23	,633	
Gender	3147,823	3	1049,274	4,87	,003	F-M, U-M, U-A
Sex X Gender	405,328	3	135,109	0,63	,598	
Error	51723,509	240	215,515			
Total	4624672,000	248				

F=Feminine, M= Masculine, A=Androgynous, U= Undifferentiated

Female parents perceived themselves more competent in problem solving compared to male parents (Table 1). However, the difference between these two groups’ problem solving skill mean scores was not found to be significant  $F(1, 240)=0,23, p>.05$ . In other words, parents’ sexes did not create a significant difference in their problem solving skills. This finding is in parallel with the findings obtained in studies conducted by Taylan (1990), Bilge and Aslan (1999), Ferah (2000), Genç and Kalafat (2007), Dündar (2009), Özyürek, Demir and Polatcan (2011) and Çevik (2011). On the other hand, it contrasts with the findings of Polat (2008), Karataş (2011), Sezen and Paliç (2011), who found significant differences in the favour of females in problem solving skills. The difference between parents’ problem solving skill mean scores was found to be significant with respect to gender personalities  $F(3, 240)= 4,87, p<.05$ . According to the Scheffe test score, which was performed to determine the gender personalities between which this difference exists and in whose favour it exists, a significant difference was found between “Feminine” parents and “Masculine” parents, in the favour of the former. Also, a significant difference was found between “Undifferentiated”, and “Androgynous” and “Masculine” parents in the favour of those exhibiting “Undifferentiated” gender personality. (The higher the problem solving inventory score, the less competent the person perceives herself in problem solving). Table 3 also shows that the joint effect of parents’ sexes and genders on their problem solving skills does not create a significant difference  $F(3, 240)= 0,63, p>.05$ .

Findings of this research suggest that nearly half of the parents exhibit gender personalities in parallel with their biological sexes. Their biological sexes do not create a significant difference in their problem solving skills. On the other hand, problem solving skills differ with respect to gender. Parents with feminine gender personality perceive themselves as more competent in problem solving..

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