

Prospective Teachers' Problem Solving Skills and Self-Confidence Levels

*Sena GÜRŞEN OTACIOĞLU**

Abstract

The basic objective of the research is to determine whether the education that prospective teachers at different fields receive is related to their levels of problem solving skills and self-confidence. Within the mentioned framework, the prospective teachers' problem solving and self confidence levels have been examined under several variables. The research sampling has been formed by 162 students who are currently studying for their bachelor's degree in Marmara University, Atatürk Faculty of Education (n = 92 Music, n = 70 PCG). 70.7% of Music Teaching Department students are females, 29.3% are males and 69.6% is between 18-22 ages. 52.9% of Psychological Counseling and Guidance students are females, 47.1% is males and 97.1 % of them consist of the students within this age group. The Problem Solving Inventory developed by Heppner and Peterson (1982) and the Piers-Harris Self-Concept Scale adapted to Turkish by Çataklı and Öner and Individual Information Form has been utilized in the research. The data of the research have been analyzed by, t-test, Kruskal Wallis-H, and Mann Whitney U tests. The findings have introduced that there are statistical differences in the aspect of some sub-dimensional values for both scales (Avoidance: $t=-2.330$; $p<.05$, Individual Control: $t=-1,975$; $p<.05$, Behavior: $t=2.009$; $p<.05$, Intelligence and school status: $t=-2.496$; $p<.05$, Coming into Favor: $t=-2.487$; $p<.05$) and it has been revealed that the relations between students' self confidence and problem solving skills are negative. As a result, although correlation between two variables showed opposite relation, one variable is not decisive in the other.

Key Words

Education, Problem Solving Skills, Self-Confidence.

*Correspondence: PhD., Lecturer, University of Marmara, Atatürk Faculty of Education Music Education Department, Göztepe, İstanbul / Turkey. E-mail: asgursen@marmara.edu.tr

Kuram ve Uygulamada Eğitim Bilimleri / Educational Sciences: Theory & Practice
8 (3) • September 2008 • 915-923

It is widely known that many factors affect learning. Some of those are interest, motivation, attitudes, problem-solving skills, self confidence, and self sufficiency. Since there is a positive relationship between successes, self-confidence and motivation, having a higher levels of mentioned capabilities increases success and having a lower levels of those diminishes success. This is because when individuals have self-confidence, they feel better within the process of learning and higher level of learning is accomplished. The basic opinion is that individuals having higher levels of self-confidence are more successful in solving problems that they confront (Owens, 2001). This situation emphasizes the necessity for defining self-confidence which is assumed to have a great effect on learning.

Self confidence is answering the question; "How the others are seeing me?" Our perception is always connecting with the others (Baltaş, 2002). Nowadays, research studies show that self-confidence and success are related (Daniel, 2006). Particularly, Fitch (1970) pointed out the relationship between self-confidence and success. In addition, self-confidence is one of the most important factors for motivation and future success. In another research, Hair (2003) found that positive self-confidence affects academic success positively.

In order to maintain efficient teaching in all branches of education, there are several important factors such as teachers' attitudes, perceptions and behaviors, students' interests, talents and attitudes, and educational methods used. All these factors complete each other within the process of education. Besides, new approaches and the use of new methods are compulsory in educational process in order to maintain active participation of students and enrich the process of education. Problem-solving methods must take place among the methods used by the teachers in the classroom (Çakmak, 2003).

Problem-solving is selecting and using the efficient and useful tools and actions among all facilities to reach the desired targets (Demirel, 2000). The purpose of the educator using this method is to direct students to scientific thinking and sufficient problem-solving skills. Bingham (1998) mentioned that problem-solving skills can be developed by discussing ideas and feelings, by giving importance and attention to people's needs.

Teaching by problem solving approach actually designates scientific research methods (Özdaş, 1997) because problem-solving method requires imaginative and scientific thinking skills. This method requires a process with stages which can be summarized as perceiving, defining, and classifying the problem, expressing the hardship in the form of a problem, developing a hypothesis by determining the observable correct ones, applying and assessing (Bozkurt, & Üstün, 2003). The problem-solving technique is giving chance to people for development and learning by living with their successes and failures (Bilen, 1996). This method puts the student in the center by emphasizing investigation in education (Demirel, 1998).

When the personal characteristics of those individuals who display higher levels of problem-solving skills are observed, it is seen that they have higher levels of self-confidence and creative thinking ability with a subjective viewpoint and higher levels of self-esteem. In addition, these people have the characteristics of being confident and impulsive without getting too anxious (Rosenberg, 1989). Self-confidence can be seen as a necessity for successful teaching. It also helps reduce feeling invaluable and negative point of social view (Covington, 1984).

Research studies that focus on people who display psychological problems show that there is a greater levels of distancing ones feelings in the absence of self-confidence (Kasatura, 1998, p. 102). According to Baltaş (2007), a person that has high level of self-esteem does not feel negative in negative situations, can make better decisions under stressful circumstances, gets lessons from results, and has an ability to prepare himself better for the future.

Based on the relevant literatures, the aim of the present research is to investigate the relationships between problem-solving skills and self-esteem levels among two different branches of teacher education candidates. For this purpose, the students of Music Teaching and Psychological Counseling and Guidance majors were selected and the following questions were answered:

- (i) Are there any significant differences on problem solving-skills and self-confidence levels based on sex, section, class, age, communicating with peers, ambition to become a teacher, beliefs in becoming a good teacher, and attendance?

- (ii) Do problem-solving skills (3 sub-dimensions) and self-confidence (6 sub-dimensions) levels vary according to the department of the students?
- (iii) Are there significant differences between the levels of problem-solving and self confidence?

Method

Participants

The research has been conducted among students studying for their bachelor's degrees during the 2006-2007 academic year in Marmara University Atatürk Faculty of Education. Students were selected from two areas: Psychological Counseling and Guidance (n = 70) and Music Teaching (n = 92). The group has been selected through random sampling. Among the students who participated in the research from Music Teaching department, 70.7% were females and 29.3% males. Those students who were selected from Psychological Counseling and Guidance included 52.9% females and 47.1% males.

Measures

For the purpose of evaluating what students think about their own problem-solving skills and approaches and measure how they perceive their own problem solving skills, the Problem Solving Inventory, Form-A (PSI-A) has been used. The scale has been developed by Heppner and Peterson (1982) and adapted to Turkish by Şahin, Şahin and Heppner in 1993 (Savaşır & Savaşır, 1997). Cronbach alpha internal consistency coefficient for the complete scale was .90. The coefficients obtained for the sub-scales were .72 and .85. The test-retest-reliability coefficients of sub-scales vary between $r = .83$ with $r = .71$. As the result of studies conducted, it has been determined that the scale consists of three sub-dimensions. The range of the correlation coefficients between these three factors varies between .38 and .49. In order to measure self-confidence, self-conception, self-perception, and evaluations, the Piers-Harris Self-Concept Scale has been used. The scale been developed by Piers and Harris 1969 in the U.S.A (Piers, 1986). The scale has been adapted to Turkish by Çataklı and Öner. The scale has six sub-scales as Behavior, Intelligence and Academic Success, Physical Appearance, Anxiety, Popularity and Happiness. The Internal Consistency Coefficients of the scale were .87 to .90 (Öner, 1997).

In addition to the two measures, an information form consisting of sixteen questions developed for the purpose of collecting information on the opinions and attitudes of students on age, class, gender, fraternity, admission at will, desiring to become a teacher, satisfaction of department choice, communication with peers, and planning regarding future was used.

Procedure

The data for the research have been collected through several stages. First, sample descriptive statistics such as arithmetic means and standard deviations on the study scales have been computed and reported in tables. Subsequently, the relational solutions determined in alignment with the objectives of the research have been computed. The statistical solutions of the data have been tested by the 13.0 version of SPSS package program. While determining the differences on the scores obtained from the respected scales and sub-scales by the students constituting the sampling group, non-parametrical techniques such as Kruskal Wallis-H, and Mann Whitney U tests were used. If the distributions showed normal distribution characteristics, parametric analysis techniques such as independent group t-test have been used. In order to determine whether there is a significant relationship between the students' problem solving skills and self confidence points, Pearson product-moment coefficient has been calculated. In addition, for finding relationships between problem-solving skills and self- confidence scores, simple coefficient analysis was used.

Results and Discussion

As the result of the analyses, the students' problem-solving skills show a significant variability across gender and department variables. It is concluded that no significant difference was present in terms of classroom variables. When we observe arithmetic means, male students are more successful ($x = 10.23$) compared to female students in terms of problem solving skills, while Psychological Counseling and Guidance ($x = 26.89$) students score higher on this part compared to Music Teaching students. In other words, female students and Music Teaching students in the sampling group scored lower in terms of problem-solving skills.

As a result of the t- test conducted, it is concluded that self-confidence scores of students from both groups showed significant differences in

terms of gender and section variables but no difference was found based on the class variable. When mean scores are compared, it was difficult to detect differences in terms of gender and department. Because of the properties of the scale, the lowest arithmetic mean was 11.92 and it is not enough for making a comment about these averages.

As the result of Kruskal Wallis-H conducted to determine if the participating students' self-confidence scores differed significantly on the independent variables, it was found that there was no statistically significant difference in term of age, not demanding to become a teacher and admission at will. The difference between groups according to communicating well with peers and belief for becoming a good teacher were significant.

In the analysis of Music Teaching and Psychological Counseling and Guidance Students' problem-solving confidence, no statistically significant difference was found. However, in terms of sub-dimensional values of approaching-avoidance and self-control, statistically significant differences were determined. Besides, significant differences have been obtained through the comparisons of the scores of Music Teaching and Psychological Counseling and Guidance students on Behavior, Intelligence and Academic Success, Popularity sub-scales.

According to the results obtained at the end of research, the prospecting teachers studying in different sections of teachers' colleges have varying in terms of problem-solving skills and self-confidence levels according to various variables (gender, section, communicating and belief for becoming a good teacher) which differ statistically. Besides, it has been observed that education received have made differences in sub-dimensional levels of problem-solving (Approach-Avoidance, Self Control) and self-confidence (Behavior, Intelligence, Popularity). It has been concluded that the students' levels of self-confidence also affects their problem-solving skills.

In a previous research, Otacıoğlu (2008) showed the importance of self-confidence and problem-solving skills in music education by a significant relation between two dimensions. Another study showed that there were similarities between Pehlivan and Konukman's (2004) comparison of physical education (P.E) teachers' problem-solving skills and other teachers' problem-solving skills similar to the present study results. In both studies, the difference of scale in Approach.-Avoidance dimension

among groups was found to be significant ($p < .05$); however, no statistically significant differences were found in problem-solving confidence sub-dimension ($p > .05$). Besides, both studies have been conducted with a common purpose in terms of comparing problem-solving skills in different branches.

Like this research, in 2007, Otacioğlu found that problem-solving skills of music education students are more qualified in terms of problem solving skills compared of PCG students. Eldeleklioğlu (2004) emphasized that self-confidence is very important for individuals to feel safe, peaceful, happy, and successful and to reach their goals. Furthermore, in his study, he has defended the opinion that the teachers must have knowledge of self-confidence which is the most important determining factor in his study. In this context, both his study and the current study support each other. Özmenteş and Bilen (2005) have studied the effects of self-confidence on musical talent on their development of attitudes towards music study. They brought up that music teaching is effective in terms of development of self confidence concerning music. In this research, it was found that there is no difference between class and problem-solving skills which is also supported by other studied in the literature such as Altunçekiç and friends (2005) and Korkut (2002).

In the present research, it has been concluded that PCG students are more qualified in terms of problem-solving skills and self-confidence compared to music teaching students. This conclusion is contrary to the common belief that specific education program studied in the department does not emphasize problem-solving skills. In order to remedy this situation, various factors that may affect problem-solving skills must be determined and more emphasize must be put in the teaching strategies of institutions training teachers. However, music Training students who are used to concerts and activities that focus more on stage performance, showing lower levels of self-confidence is surprising. Otacioğlu (2006) has reached the conclusion in her research that the prospecting music teachers' levels of self-confidence supports their academic and instrument success. This shows that the findings of both studies support each other. Thus, it has been concluded that the prospecting music teachers' self-confidence levels have vital importance and affect in maintaining their academic success.

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