The Perception Levels of The Novice Teachers’ Problem-Solving Skills
Türkay Nuri Tok\textsuperscript{a*}, Şükran Tok\textsuperscript{b}, Sevda Doğan Dolapçıoğlu\textsuperscript{c}

\textsuperscript{a} Pamukkale University, Faculty of Education, Denizli, 20700, TURKEY  
\textsuperscript{b} Pamukkale University, Faculty of Education, Denizli, 20700, TURKEY  
\textsuperscript{c} Hatay Provincial National Education Directorate, Hatay, TURKEY

Abstract

This study aims to determine the perception levels of the novice teachers’ problem-solving skills as well as to what extent these skills change according to independent variables. This research is a general survey type research. The participants of the working group are 51 novice teachers. In this research Problem Solving Scale has been used. It has been understood that the novice teachers within the scope of the research do not have the characteristics mentioned. In other words, they do not rely on their problem solving skills and they think they are inefficient in that topic. Also, it has been determined that there is not a meaningful discrepancy among the views according to gender and choosing teaching.

Keywords: Novice teacher, problem solving, problem solving skill.

1. Introduction

Dewey defines problem as anything which confuses human mind, challenges human mind and makes the belief indistinct (Gelbal, 1991). Individual success depends upon individuals’ solving the problem without being captivated by the problems they face in their daily lives, analyzing the problem realistically and identifying the underlying reasons realistically (Güçlü, 2003). Although problem solving had been used as a conception for a long time, it was systematized firstly by John Dewey, US Educator. Problem solving is generally making plan to answer a question, offer satisfying reply to a hard task, find a solution or declare interest (Mark, 1994, cited in Yenice). Problem-solving is a cognitive, affective and behavioral process which includes finding effective ways to deal with the problems faced in daily life (D’Zurilla and Nezu, 2001). Heppner and Krouskpf (1987) define the problem solving as the harmony of complicated internal and external motivation and desire for the cognitive and effective behavioral processes, Bingham(1998) defines it as a process requiring as a series of efforts to eliminate the difficulties encountered when trying to reach a certain target. Also, individual’s turning to problem-solving is

\* Corresponding Author name. Türkay Nuri Tok Tel.: +0-000-000-0000  
E-mail address: author@institute.xxx

Even if the behavioral category of the problem-solving process requires differs from the problem to problem and from the individual to individual, problem-solving process has its own certain, basic stages. As a rule, the models used for the problem-solving processes are rarely modified models of John Dewey’s having been used since 1910. The way of problem-solving is a method of thinking and implementing activities such as understanding and defining the problem, designating a theoretical way of solving it and testing this type of solution until a satisfying evidence has been found (Oğuzkan, 1993; cited in Güçlü, 2003).

Problem-solving develops skills of a person such as forming democratic manner and attitude, critical thinking, making a decision, questioning and reflective thinking. (Demirel, 2004) People who see themselves as effective problem-solvers are people who are ‘self control’-based, have self confidence in deciding, can give appropriate answers to the interpersonal and environmental demands. Also, it has been said that they feel responsible for elements which creates negative effect, and that they believe that their personal decisions affect their health. People who solve problems inefficiently relates problems to the outer bases and cannot keep the situation under control. (Baumgardner, Heppner, and Arkin, 1986).

As well as being an important skill which everybody living in a society should have, problem-solving skill has been viewed as much more important for the people in some types of profession, especially for the people who are in the professions where they help human beings (Hamamcı and Çoban, 2009). One of these professions is teaching job. Today, we need people who have some characteristics which are available in people who have problem solving skill. These people carrying these characteristics who have critical thinking skills, do researches, question, are creative, internalize universal values, improve oneself, think independently, are productive and constructive and who integrate with democratical values. Concordantly, education systems are expected to raise manpower with these characteristics. (Saracaoğlu and Kaşlı, 2001; Saracoğlu, 2003) Undoubtedly, teachers and prospective teachers should have these certain qualities in order to get children and young people to acquire them (Saracaoğlu, Yenice and Karasakaloğlu, 2009).

There are many studies having been done in terms of teacher, administrator and prospective teachers. In their study Demirtaş and Dönmez (2008) find out that high school teachers perceive their problem-solving skills at intermediate level. However, Güçlü’s study (2003), shows that the problem solving skills of high school principals are high; also in Serin’s study (2006), the problem-solving skills of female teachers are higher than those of male ones. Correspondingly, Arlı, Altunay and Yalçınkaya (2011), in view of prospective teachers’ problem-solving skills, find meaningful differences in favour of female teachers. Genç and Kalafat (2010) in a similar study find no differences in problem-solving abilities of prospect teachers.

Teachers face many problems in classroom environments and they need to be able to make effective and objective decisions, must be able to produce the best solution in every condition and for all these, his or her problem-solving ability must be well-developed. Given the problems at schools like conflict, violence, school absenteeism, failure, drug addiction, the teachers whose problem-solving abilities are developed will be needed (Arlı, Altunay and Yalçınkaya, 2011). Figley (1985) states that the experience and professional time of the teachers affect their attitude in solving the problems (cited in Pehlivan, Konukman, 2004). Determining the perception levels of the novice teachers’ problem-solving skills beforehand may yield important benefits in earning the qualifications they need to have in the fairly early years of their professions. Moreover, in literature study no study regarding the perception levels of the novice teachers’ problem-solving skills has been found.

This study aims to determine the perception levels of the novice teachers’ problem-solving skills as well as to what extent these skills change according to independent variables. Specifically, the following research questions were investigated:

Specifically, the following research questions were investigated:

1. What is the perception levels of the novice teachers’ problem-solving skills?

2. Do the skills of the novice teachers differ according to the independent variables (gender, the order of his or her professional preference -of becoming teacher)?
2. Method

This research which aims to determine perception levels of novice teachers’ problem-solving skill is a general survey type research. The participants of the working group are 51 novice teachers on duty in their first year in Hatay Province in Turkey. In this research Problem Solving Scale (PSS), developed by Heppener and Peterson (1982) has been used. Taylan (1990) did validity and reliability study of the inventory by citing from Happner. PSS is a scale of Likert Type made up of 35 items marked from 1 to 6. Items 9, 22 and 29 are excluded from scoring. Scoring is done with 32 items. The range of score that can be achieved in this inventory is 32-192. Accordingly, scale is as follows: “I always act like that” 1, “I usually act like that” 2, “I often act like that” 3, “I sometimes act like that” 4, “I rarely act like that” 5, “I never act like that” 6. In the marking low marks show effectiveness in problem-solving, high marks, on the other hand, show not being able to find solutions when encountered with the problems (Taylan, 1990; Keleş, 2000, cited in Güçlü, 2003). The muchness of the marks that were taken from the scale shows that the person evaluates himself as inefficient in problem-solving skills and that they show avoidance and they do not feel self control (Abaan and Altıntoprak, 2005).

Factors analysis works show that PSS are made up of three sub-scales. These are “The Trust in Problem-Solving Skill (item 10)”, “Approaching-Avoiding (item 13)” and “Personal Control (item 5)” (Taylan, 1990, cited in Güçlü, 2003). The variances every sub-factor explains are 44, 37, and 45 respectively. The Cronbach and Alpha values are .81, .84, and .70 (Güçlü, 2003). First sub-scale’s factor load values vary between .47 and .82 and its total correlations of items vary between .30 and .73; second sub-scale’s factor load values vary between .41 and .71 and total correlations of items vary between .32 and .59. And the third sub-scale’s factor load values vary between .65 and .82 and total correlations of items vary between .40 and .65. (Keleş, 2000, cited in Güçlü, 2000) As a result of the studies which were held, Cronbach Alpha internal consistency parameter for the whole scale is 90 (Savaşır and Şahin, 1997, cited in Güçlü, 2003). In the analysis of data, frequency, mean, standart deviation, one-way variance analysis (ANOVA) and independent samples t-test have been used.

3. Findings and Results

3.1. Novice teachers’ perception levels of problem-solving skills

The results of descriptive statistics which were held to assess which level the novice teachers’ perception levels of problem-solving skills were in have been given in Table 1.

<table>
<thead>
<tr>
<th>Sub-dimension of Problem Solving Inventory</th>
<th>N</th>
<th>( \bar{X} )</th>
<th>SD</th>
</tr>
</thead>
<tbody>
<tr>
<td>The Trust in Problem-Solving Skill</td>
<td>51</td>
<td>47.22</td>
<td>7.78</td>
</tr>
<tr>
<td>Approach-Avoid</td>
<td>51</td>
<td>57.88</td>
<td>8.91</td>
</tr>
<tr>
<td>Personal Control</td>
<td>51</td>
<td>19.57</td>
<td>3.25</td>
</tr>
</tbody>
</table>

According to Table 1, in the sub-dimensions of PSS the mean of points "The Trust in Problem-Solving Skill" \( \bar{X}=47.22 \); in the sub dimension of "Approach-Avoid" is \( \bar{X}=57.88 \), and in the sub-dimension of “Personal Control” is \( \bar{X}=19.57 \).

There ten items at The Trust in Problem-Solving Skill factor and the total points obtainable from this dimension can differ from 10 to 60. The mean of the points of the novice teachers attending this research is \( \bar{X}=47.22 \). When this value is taken into consideration, it can be said that the novice teachers perceive themselves as inefficient.

The mean of "Approach-Avoid" sub-dimension of novice teachers is \( \bar{X}=57.88 \). It can be said that to apply in the future the first the problem-solving skill of the novice teachers of this factor means the necessity to do effective research to revise the efforts of problem-solving is low.

The mean of the sub-dimension of "Personal-Control" is \( \bar{X}=19.57 \). The total score obtainable from 5 items in this dimension is from 5 to 30. It can be said that the skills of problem-solving of the novice teachers belonging to this factor stating the ability to maintain personal control when in problematic situations is low.
3.2. The comparison of novice teachers’ perception levels of problem solving skills according to the gender

The results of t-test which was held for the discrepancy according to the gender variable of novice teachers’ perception levels of problem solving skills are given in Table 2.

<table>
<thead>
<tr>
<th>Factors</th>
<th>Sex</th>
<th>N</th>
<th>X</th>
<th>SD</th>
<th>df</th>
<th>t</th>
<th>p</th>
</tr>
</thead>
<tbody>
<tr>
<td>The trust in problem-solving</td>
<td>Female</td>
<td>36</td>
<td>46.47</td>
<td>8.18</td>
<td>49</td>
<td>1.058</td>
<td>.295</td>
</tr>
<tr>
<td>skill</td>
<td>Male</td>
<td>15</td>
<td>49.00</td>
<td>6.61</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Approach-Avoid</td>
<td>Female</td>
<td>36</td>
<td>58.30</td>
<td>7.83</td>
<td>49</td>
<td>.522</td>
<td>.604</td>
</tr>
<tr>
<td></td>
<td>Male</td>
<td>15</td>
<td>56.86</td>
<td>11.32</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Personal Control</td>
<td>Female</td>
<td>36</td>
<td>19.44</td>
<td>3.38</td>
<td>49</td>
<td>.419</td>
<td>.667</td>
</tr>
<tr>
<td></td>
<td>Male</td>
<td>15</td>
<td>19.86</td>
<td>2.99</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

When Table 2 is analyzed, it has been understood that novice teachers’ perception levels of problem solving skills do not show meaningful discrepancies according to the gender in the dimensions of "The Trust in Problem-Solving Skill" [t(49) = 1.058, p > .05], "Approach-Avoid" [t(49) = .522, p > .05] ve “Personal Control” [t(49) = .419, p > .05].

3.3. The comparison of novice teachers’ perception levels in problem solving skills according to the order of preference of teaching profession

The results of ANOVA which was held for the discrepancy of problem solving skills of novice teachers who attended to the research according to the order of preference of teaching profession are given in Table 3.

<table>
<thead>
<tr>
<th>Factors</th>
<th>Order of preference</th>
<th>N</th>
<th>X</th>
<th>SD</th>
<th>df</th>
<th>F</th>
<th>p</th>
</tr>
</thead>
<tbody>
<tr>
<td>The trust in problem-solving</td>
<td>First choice</td>
<td>16</td>
<td>49.06</td>
<td>5.65</td>
<td>2</td>
<td>1.212</td>
<td>.306</td>
</tr>
<tr>
<td>skill</td>
<td>2 - 5th choice</td>
<td>19</td>
<td>47.63</td>
<td>6.81</td>
<td>48</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>6th and over</td>
<td>16</td>
<td>44.87</td>
<td>10.21</td>
<td>50</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Approach-Avoid</td>
<td>First choice</td>
<td>16</td>
<td>60.87</td>
<td>8.89</td>
<td>2</td>
<td>3.027</td>
<td>.621</td>
</tr>
<tr>
<td></td>
<td>2 - 5th choice</td>
<td>19</td>
<td>58.89</td>
<td>7.88</td>
<td>48</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>6th and over</td>
<td>16</td>
<td>53.68</td>
<td>9.00</td>
<td>50</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Personal Control</td>
<td>First choice</td>
<td>16</td>
<td>19.81</td>
<td>3.20</td>
<td>2</td>
<td>.300</td>
<td>.742</td>
</tr>
<tr>
<td></td>
<td>2 - 5th choice</td>
<td>19</td>
<td>19.10</td>
<td>3.39</td>
<td>48</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>6th and over</td>
<td>16</td>
<td>19.87</td>
<td>3.26</td>
<td>50</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

ANOVA results in Table 3 have shown that novice teachers’ perception levels of problem solving skills do not create any meaningful discrepancies in the sub-dimensions of "The Trust in Problem-Solving Skill" [F (2, 48) = 1.212, p > .05], "Approach-Avoid" [F (2, 48) = 3.027, p > .05], ve “Personal Control” [F (2, 48) = .300, p > .05] according to the order of preference of teaching profession.

4. Conclusions and Recommendations

Studies that were held present that people who think they are efficient problem solvers see themselves more systematic in problem solving, that they understand the problem better, that they act against problems in a much planned way and they see themselves as people who address the problem. (Abaan and Altıntoprak, 2005). It has been understood that the novice teachers within the scope of the research do not have the characteristics mentioned. In other words, they do not rely on their problem solving skills and they think they are inefficient in that topic. Also, it has been determined that there is not a meaningful discrepancy among the views according to gender and choosing teaching.
When studied the views in “The trust in Problem-Solving Skill”, which is one of the sub-dimensions of Problem-Solving Skills, it has been realized that the novice teachers’ faith in the ability of problem solving is weak. In fact, novice teachers need to be able to solve the problems they face and to overcome the difficulties which are faced in life because, as Dündar indicates (2008), people can be successful as long as they can overcome these difficulties. People who can solve their problems cling to life much more than the others. In addition, people who have self confidence can solve their problems more easily than people who are not self confident. (Baumgardner, Heppner and Arkin, 1986)

As for the “Approach-Avoid” sub-dimension, another dimension taken into account in the research, which exhibits the behaviors to face the problem or to avoid it, it has been found out that the novice teachers tend to avoid. According to Johnson and Johnson’s conflict and problem solving strategy, turtles withdraw into their shells to avoid the conflict. They easily give up their goals. They stay away from the issues in which the conflict occurs and from the people related to the conflict. They believe it is desperate to struggle for the solution of the conflict. They feel miserable and they believe that staying away from the conflict is easier to do rather than facing the conflict (cited in Öğülmüş, 2001). It is not desirable for teachers like turtles to stay away from the problems, to be reserved against the difficulties, to be ready for accepting the failure without struggling.

It has also been realized that the results acquired from the sub-dimension “Personal Control” which is defined as people’s ability to keep their control in problematic situations (Savaşır ve Şahin 1997) are negative as well. This situation reveals that novice teachers cannot find alternative ways for solution to the problems that they may encounter in the future, and they couldn’t improve themselves in terms of keeping their control, and they cannot act independently while making a decision. As a result, thanks to the information taken from the sub-dimensions, it can be inferred that novice teachers do not trust their problem solving skills, that’s why they avoid looking for solution to the problems, and they feel personal control less.

It has been understood that novice teachers’ perception levels of problem solving skills in sub-dimensions do not show meaningful discrepancies according to the gender. In the studies that were held by Demirtaş and Dönmez, (2008) Saracoğlu and others, (2009) and Taylan (1990), meaningful discrepancies could not be found between problem solving skills and gender. Hence, research findings are coherent to these studies. Karabulut and Bulut (2011), Katkat (2001), Şahin and Şahin (1993) found meaningful discrepancies between problem solving skills and gender. The difference between the results might be because of the different research groups and the characteristics of the people involved in the studies.

One of the results taken from the research is that there is not a meaningful discrepancy between the order of choosing the profession and problem solving skills. Preferring the profession in the former options or latter options does not have an effect on problem solving skills.

According to the other results of the research in view of sub-scale scores of problem solving skill of the novice teachers don't change according to gender and the order of professional preference of becoming a teacher. In the light of these findings, the following can be said:

1. It is significant for teachers to have problem solving skills in their first years of working, the years when leaving the job is often. That’s why in service training programs including methods of problem solving can be organized for novice teachers. Also other experienced teachers at school, school directors and education supervisors can lead the problem solving skills to be improved and can be the models.

2. Studies that were held show that the educations taken for the sake of problem solving process will be efficient to improve problem solving skills. (Olgun, Öntürk, Karabacak, Aslan and Serbest, 2010). So, teacher candidates who believe that they can solve the problems they face, who are self confident, who do not give up against the difficulties, who have high problem solving skills can be trained in teacher education programmes. With this purpose, activities such as debate, open forum, problem solving, case study, discussion and project works can be organized to improve skills of critical and reflective thinking and to increase problem solving skill.

3. Prospective teachers can face different problems when they are giving lessons in the practice teaching period. Both supervising teacher and cooperating teacher can lead them in order to make them gain confidence in their first problem solving experience.

4. Qualitative researches can be held deeply related to the problem solving behaviors of novice teachers by using other variables, too.
References


