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Determining the views of preschool and primary school Teachers over the support of problem solving skills at children

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Abstract

It was aimed in this study to determine the views of preschool and primary school teachers over the development and support of problem solving skills at children within the content of the project named “Improving Problem Solving Scale for Children at Preschool and Primary School 1-5 Grades and Normative Study of Turkey” supported by TUBITAK. For this aim, focus group management was used. The working group consisted of 11 teachers working at official and private preschool educational institutions and primary schools. Interviews with preschool and primary school teachers were carried out in two sessions of 90 minutes.

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Introduction

According to Piaget, children need complex relations in other words problems in order to improve in terms of cognitive development. However, the selection and presentation of these problems to be used to make them attain problem solving skills is of great importance. Good problems enable children to explore with their own styles. It provides them an opportunity to make a balance between newly acquired behaviors and experience (Goffin & Tull, 1995; Metz, 1993; Dinçer, 1995; Çelen, 1999; Zembat & Unutkan, 2003).

School environment bringing a great many children with different personalities, abilities and needs together, supplying them a lot of materials related to their growth and improvement is a very convenient environment in terms of choosing problems, knowing and solving them (Casey & Lippman, 1991; Erden & Akman, 1998). Teacher is the basic source for the children in order to improve their problem solving skills at school. Due to the time they spend

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with children and intensive interaction, teachers, those working at preschool and primary schools in particular, are responsible for observing that all the materials in the environment and cases guiding can be turned into learning cases and joining new components into the current case (Katz & Chard, 2000; Gander & Gardiner, 2001).

Therefore, with an awareness that problem solving skill is a skill to be supported starting from the very beginning of life onwards, it is required that problem solving skills should be given more attention at preschool and primary schools, the knowledge and practices of teachers aiming at problem solving should be evaluated, some educational programs should be arranged regarding developmental features and needs of students and that the support of parents in this issue should be obtained. This study was conducted to answer these needs.

2. Method

It was aimed in this study to determine the views of preschool and primary school teachers over the development and support of problem solving skills at children within the content of the project named “Improving Problem Solving Scale for Children at Preschool and Primary School 1-5 Grades and Normative Study of Turkey” supported by TUBITAK. Within this general perspective, such views as the knowledge of children on problem solving skills, their activities concerning the improvement and development of problem solving skills of students in the class and the roles of parents in the support of problem solving skills of children were tried to determine.

The technique of focus group interview, one of the qualitative research methods, was used in the current study. A total sum of 11 teachers, six working at official and private educational institutions and five working at primary schools within the Directorate of Education in Ankara, were included in the working group.

The interviews were carried out in the control of the moderator and accompanied by three observers in the project team with preschool and primary school teachers in two different sessions of 90 minutes. After the participants were explained the purpose of the interview, open ended questions prepared beforehand were asked to them and they were encouraged for an active participation. The interviews were recorded with the permission of the participants. Content analysis approach was used in the analysis of the data.

3. Findings and Discussion

The findings obtained in the focus group meeting were given as headings below.

Problems experienced in daily life

Preschool and primary school teachers expressed that they mostly encountered such problems as traffic, materialistic problems, future anxiety, human relations and so on, they sometimes experienced some slightly problems like how to find a place, what to wear that day, unexpected guests and what to cook that day. As for children of primary school period; examinations were particularly regarded as a problem and increased the anxiety, however it was indicated that some amount of anxiety would be beneficial in the solution of the problem. Nevertheless, it was stressed that the occurrence of willingness and feeling for the need increased success.

As the working group participants stressed, individuals have experienced numerous cases and events in which they present their problem solving skills throughout their lives (Gökçakan & Nadir, 2001). Therefore, real life requires the solution of a series of problems such as simple, scientific, social, mechanic, mental and logical ones (Tallman et al., 1993; Cüceloğlu, 2000). It was determined in a study that children produce more creative solutions in real or near to real cases (Alexander et al., 1994) and in another similar study it was indicated that children are more effective in learning the systematic rules of unfamiliar problem solving (Richards & Siegler, 1981).

The strategies educators use in problem solving

While preschool teachers expressed that they mostly benefited from such strategies as trying to find practical ways to eliminate problem, getting knowledge from those who encountered these problems before or from such sources as the Internet and books etc., determining necessary materials, using cognitive talents, primary school teachers on the other hand cited that they particularly used the strategy of trial and error.

The problem solving methods the educators expressed they used are explained through the approaches of impulsive, trial and error and benefiting from ready made models (Arkonaç, 1993; Fidan, 1996; Yıldızlar, 1999; Senemoğlu, 2001; Ülgen, 2001; Bacanlı, 2003). Besides these approaches, introduction of basic lacking concepts,

solving the problem at every level of difficulty regularly and frequently are of great importance in terms of learning such problem solving strategies as diagnosing the problem at children, categorizing, choosing the method to be used (Tertemiz, 1995; Denniston, 2002).

Problem solving stages

All of the teachers in both groups listed the stages of problem solving as; being aware of the problem, defining the problem and understanding the reason, evaluating the reasons and guessing, collecting data to prepare for the solution, finding alternative ways of solution, approving the ways of solution and testing them. Especially primary school teachers stressed that emphatic behaviors following the stage of being aware of problems related to individuals are of vital importance in the process of reaching the problem.

As well as different classifications are made at problem solving stages in the literature, it was indicated that in such a process are; recognizing the problem, explaining the problems, collecting data, selecting the data, applying the type of solution chosen, evaluating the type of solution used (Pressley & Woloshyn, 1995; Morrison, 1998; Yıldırım, 1998; Batgün, 2000; Zembat & Unutkan, 2003; Bingham, 2004).

The reasons affecting problems solving skills

These reasons were listed by educators as; the features an individual has innately, self esteem, motivation, experience, the skill of perceiving the problem, the fact that adults reinforce the behaviors of children, giving responsibility to the child, granting them freedom and being a model.

It is also known through researches that there have been some individuals among children in problem solving and problem solving talents of children are influenced by many factors such as emotional, cognitive and experiences. Such factors as willingness to problem solving, self esteem, stress and anxiety, ambiguity, patience and effort, interest in problem solving and the case of problem, being eager to be successful, the wish to make parents glad were included in the group of emotional factors (Swanson et al., 1993; Baykul, 1995; Özusta, 1998). In study conducted with primary school students concerning the issue it was found that motivation increases creativity at children and help solve problem easily, in a different study it was found that the intensity of dependence especially between mother and child and the negative in relations create a negative effect in problem solving. The vocabulary capacity a child, numerical talents, communication skills, creative thinking and similar skills are regarded within cognitive factors (Runco, 1991; Özgüven, 1994). The success of a child in problem solving is considered together with intelligence within the content of cognitive factors rather than the qualification of the problem and it is thought that the more intelligent the child is, the more successful he will be in problem solving (Morgan, 1998; Dinçer, 1995).

Besides emotional and cognitive factors, experiences will also contribute for the child to involve learning process actively, to propose solution for the problems appearing, to discuss them, to apply the programs planned and to cooperate with the people around him, and it will also help the child improve attitudes and skills in problem solving (Bradley et al., 1993; Arı, 2003). According to Piaget, children are not granted knowledge directly. They obtain what they learn in concrete experience the best. The basic task of adults here is to present new things in his repertoire to the child trying to solve a problem (Oktay et al., 2003). When we take the fact that experiences attained in early life will encourage the child in forming new cognitive relations with his environment through communications into consideration, creating problem solving experiences and supporting them with private educational programs become more significant (Aydoğan, 2004).

The activities of Educators Aiming at Developing and Evaluating the Problem Solving Skills of Children in the Class

- In preschool period; it was expressed that such ways as introducing the school and the class to children not wishing to leave their mothers, telling them what teacher and friend means, introducing them to other children, informing them about what is happening in the school, making them get used to the school by making them stay at the school longer, orienting the active children to different activities, teaching social skills, making repetitions, paying attention to children who are used to getting help from their mothers in some task they are expected to do individually such as tying his shoe laces, being patience, being a model by showing how to do it, interviewing with the parents, getting help from other children, explaining to children not liking to share by talking to them, awarding

him when he exhibited the behavior of sharing and sharing positive behaviors with the family by sending them letters were tried; as for primary school, it was indicated that children are mostly complain about each other, they do not get on well and they have some difficulties in communication and such cases are all ignored.

- Concerning the support for problem solving skills of children, educators expressed such methods as allowing children some opportunities to make some trials by leaving them alone with their problems and in this way making them find solutions to their problems, encouraging them for the solution, helping them by offering them simple problems so making them feeling self esteem, making the case of problem enjoyable with games, indicating that he considers what the child does important, and using some feedback to the child; taking notes with the problems solved and sharing them with parents. Primary school teachers indicated that it is necessary that knowledge and skills presented to children be repeated, a lot of exercises be done and parents be involved in the process.
- Classroom activities planned concerning the support of problem solving skills at children were listed as drawing pictures at preschool period, creating stories related to pictures and illustrating the stories written. As for primary school; using problem solving cards, trying to solve different problems, trying to do the activities of comprehending what is read, teaching how and to what purpose vocabulary is used, making problem cases concrete by drawing and improvisation, being a model, doing project works at the level of the class and working on how to define feelings.
- It was expressed in both groups that such activities as holding meetings with parents, news letters, interviewing with parents while leaving and taking children, corresponding about methods applied by teachers during the problems experienced and what they are expected, following the activities done at home and at school.
- Concerning the evaluation of problem solving skills at children, educators expressed that they found out the ways to find solutions to problems, they retreated when they were reacted and tried others methods, they naturally found another method, they tried to solve the problem to the end impulsively and they made certain trials. In addition, they cited that they children with high logical intelligence found it easily when they were given problems related to daily life while others tried to find it by the method of trial and error.

As indicated by the participants, development in the problem solving skills of children is mostly related to the activities at preschool period. Puzzles, games related to learning, reading and mathematics are regarded as the best problem solving activities (Dennistion, 2002). Most children explore problem solving independently. However, from preschool period onwards, some tools and materials, toys, activities such as games and artistic activities and tests dealing with the issue will all help improve problem solving skills (Gehlback, 1991; Dinwiddie, 1994; Hughes, 1995; Segatti et al., 2003). Besides all these, it is of importance that such activities as planning to encourage problem solving, predicting the result, deciding and monitoring these results should be done at educational institutions (Elliott & Krotochwill, 1992). To fulfill it, educators should know what kind of problems children encounter and what problems are suitable for children to solve. Furthermore, it is of great importance that drama, music, games, listening to stories and telling stories should be taken place to a great extent, individual and group activities should be arranged, children should be free in choosing activities in order to grow up successful problem solvers.

The Views of Educators Concerning the Roles of Parents in Supporting the Problem Solving Skills of Children

Educators in both groups expressed that parents behaved overprotectively and intrusively and such a case affected the child negatively in solving the problem, working parents gave more responsibility to children and so children became more successful in problem solving, some parents grew up self esteemed but uncontrollable children due to limitless freed they gave to their children. One teacher indicated that such a freedom is only apparent but in fact there was a pressing attitude and parents represented incoherence in the concept of freedom

It is stressed in the studies that it is essential that learning and problem solving opportunities should be created not only at the school environment but also at home. That's why, there is a need to know the way to convert every kind of materials and spare goods into learning materials for children and the roles to support problem solving skills of children (Ömeroğlu & Turla, 2001; Aydoğan; 2004).

Need for Knowledge Concerning Problem Solving Skills

Educators in both groups expressed that they are in need of knowledge over supporting the problem solving skills of students and they should be given in-service training in this issue. It was stressed that teachers should be open to development and change in order to meet the expectations of in-service training to be given to teachers in this issue. It was also indicated that motivation is of importance, life cases such as focus group meetings in stead of seminars will be more effective and different teachers in different branches should come together and do meetings dealing with these issues.

In a study carried out in Boston College, teachers participating problem solving classes were trained in effective problem solving approaches and activities in order to help children become creative and independent problem solvers (Casey & Howson, 1993). Participants of focus group meetings expressed that they would like to be included in similar educational programs depending on their willingness within the light of knowledge and applications they have.

4. Conclusion and Suggestions

As a conclusion of focus group meetings, it was determined that educators often encountered problems at different levels of difficulty in their daily lives, they mostly used the method of trial and error strategy out of other strategies, they regarded every stage of problem solving to reach the solution, they applied different individual and group activities depending on their development levels and ages in and out of the classroom, they needed the participation and support of parents in improving problem solving skills of children, they carried out different activities concerning the issue at the schools they worked and finally they needed knowledge and practice at problem solving.

Within the light of these results, it is necessary that a detailed need analysis should be made benefiting from the data obtained at focus group interviews and the needs of teachers should be determined in the issue of problem solving. It should be considered that presentation of detailed and practical educational programs prepared depending on this knowledge to the teachers through in-service courses or mass media tools, and including this education into compulsory courses to be studied during university education will enable to grow successful problem solvers.

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