Effectiveness of Cooperative Learning Method on Academic Buoyancy of Male Students of Second Period Elementary School in the City of Shahriar

Osameh Salimi  
Master of Educational Psychology at Allameh Tabataba’i University, Tehran, Iran

Hasan Asadzadeh  
Associate Professor at Assessment and Educational Psychology Department at Allameh Tabataba’i University, Tehran, Iran

Nayyereh Ghotbian  
MA in Counseling, Iran

Mahsa Nazemi-Moghadam  
Master of Educational Psychology, University of Khwarazmi, Iran

Zohreh Azizi  
Master of Clinical psychology, Islamic Azad University, Varamin, Iran

Abstract

The present study was done to determine the effectiveness of cooperative learning method on educational buoyancy of male students of second period elementary school in the city of Shahriar. Research methodology was quasi-experimental in which a pretest and posttest with the control group was used. The statistical population consisted of all male students of second period elementary school in Shahriar in the academic year 2014-2015. The city was divided to the east and west parts; and 24 subjects were selected through random cluster sampling method. The experimental group received eight sessions of cooperative learning and the control group received traditional teaching. To collect data, Martin and Marsh’ (2008) academic buoyancy test as well as to analyze data the univariate analysis of covariance was used. Based on the average scores of pretest and post-test and comparing them with that of the control group, the results showed that the students’ academic buoyancy has been increased.

Keywords: academic buoyancy, cooperative learning, students.
Introduction

There is no doubt that one of the aims and tasks of education is to prepare students to admit and understand the scientific developments in the world of the future. However, the most important aim is to flourish the students’ character completely and to raise the transcendent values (Kadivar, 2011). On the other hand, the progress of science and the expansion of the scope of the various sciences make inevitable the acquisition of lasting more information in a shorter time; so another responsibility of education professionals to identify the appropriate strategies for students to learn faster and better and the optimal use of time-limited education by learners (Amarpour, 2006).

Human life is full of different experiences that each person takes particular experiences from the environment and transmits them to the generations that followed. Transferring these experiences will enrich the lives of the next generation easier and more fruitful. In transferring life experiences of individuals, many factors such as family, community and education are involved. Education as a great chain links the human’s experiences and is considered as one of the largest and most complex social systems (Siahpoush, MoqadasJafari and Farbaghlani, 2011).

Education in general and school in particular is the social institution affects the life and determines opportunities, quality of life and behaviors of children and adolescents. School has a unique and profound impact on the lives of students and plays a major role in defining the overall sense of individual from community in adolescence. The conducted studies consider school in the framework of the concepts such as belonging, membership, satisfaction, commitment, engagement and connection as a predictor of students’ educational, psychological, social and behavioral achievements. These studies have emphasized on educational outcomes such as attention to education, school misconduct such as fraud and violation of the laws, success and achievement, student’s motives and dropout. The risky behaviors such as substance abuse, sexual behavior, aggressive behaviors and wrong behavior have been considered as the other factors affecting teenagers in conjunction with the school (Panaghi et al., 2010).

One of the strengths that the school gives students is the power to adapt to the environment and other people. Martin and Marsh (2006, 2008) suggested that the students’ buoyancy is an important component in adapting to the education challenges. Martin (2007) defines the academic buoyancy as a term to describe the ability of students in the successful integration of problems after failures in education by factors such as self-efficacy, commitment and improved control.

Webster’s dictionary defines «buoyancy” in its second meaning as the ability to recover quickly from depression or discouragement. Typically, the resilience deals with a small group of students who experience very serious problems, while a large population of students experiencing academic challenges is often ignored. So, Martin and Marsh (2009 &2010) proved that the concept of resilience does not take into consideration many students faced with obstacles, difficulties, challenges and pressures and that these obstacles and difficulties are parts of everyday schooling life. The researchers suggested that these challenges reflect the “academic buoyancy”
that is apart from severe and chronic academic problems related to traditional structure of resilience (Masten, 2007; Rutter, 1985; Werner, 2000; quoted in Barnett, 2012). Academic buoyancy was formed from academic resilience to distinguish the small but important resilient students that have allocated the highest degree of attention in terms of education and the majority of students that often experience trivial problems and difficulties but with lower extent and type in the same continuum. The students with academic buoyancy were unknown in the research works since Martin and his colleagues studied this phenomenon (Karimi Qarmatani, 2012).

Academic buoyancy is a term that was coined by Dr. Martin to describe the ability of a student for the successful integration of problems after academic failures and difficulties, which is improved by factors such as self-efficacy, commitment and improved control. In other words, Martin and Marsh (2009) defined the term “academic buoyancy” as a student’s ability to successfully overcome the difficulties and challenges special for the everyday educational life (such as poor performance, homework deadline for the competition, pressure of homework, difficult homework). In addition to these features, academic buoyancy predicts three educational and psychological outcomes that are the pleasure of school, attending in class, and general self-esteem (Martin and Marsh, 2006).

A large number of students experience challenges, failures and stress as a part of everyday school life (Martin, Colmer and Marsh, 2010). Martin and Marsh (2008, 2009) suggested that a key component in students’ compatibility aligned with academic challenges is to be buoyed. Barnett (2012) by reviewing studies suggested that the academic buoyancy was formed from the studies on resilience related to the literature of children psychologically at risk and described the students that despite the experience of the serious, severe and chronic difficulties overcame the problems and were successful in education (Martin and Marsh, 2008).

Slavin (1991) considers cooperative learning as a solution to deal with a mass of educational problems, as well as a means to enhance thinking skills and to improve learning, and as an alternative to group students according to their abilities and also a means to improve the relations of students of different races and to prepare them to play a role in the group activities (quoted from Pakizeh, 1997: 3-4).

Johnson, Johnson and Marayama (1981) concluded that training cooperation enhances the positive relationships between learners with different levels of ability more than individual competitive structures. Gage and Berliner (1992) have shown that students ‘cooperation with each other reduces their bias and hostility and in addition to the effectiveness in academic achievement, is effective in elimination of students’ situation and bias. The term «cooperative learning” is related to the method in which students work at different levels of performance in small groups to achieve common goals (Guckhall, 1995).

One of the most important features of cooperative learning of the cooperative group, and one of the most important features of the cooperative group that helps to define it, is the group objective. Cooperative groups are typically formed to achieve the objectives that members of the group
follow and the objectives that their attainment becomes easier through joint efforts. A cooperative group is effective in achieving the group objectives only when its members are committed to achieve the objective of the group. What factors affect their willingness to commit to the group objectives? An important factor is the degree of the member participation in making decisions about the nature of what the group will do and how to achieve it (Felder and Brent, 1994).

According to Glosser, cooperative learning is nothing more than putting students in groups. In fact, it is a classroom management (Glosser, 2001, quoted from Keramati, 2005). Elizabeth Cohen refers to the four basic concepts about the productivity in cooperative learning. The first concept is the student achievement which is measured by relevant tests. In his opinion, achievement tests emphasize on the basic and applied concepts. The second concept refers to development of high level thinking skills. The third concept is related to equality of opportunities for cooperative team members in the field of interacting with each other; and the fourth concept emphasizes on desirable social behaviors of students in cooperative groups that can be called positive in-group interactions (Cohen, 1994).

In the field of cooperative learning, Slavin believes that cooperative learning has three important features: the group rewards, individual responsibility and equal opportunity for success (Slavin, 1991). Saif(2013) also refers to several important characteristics, such as small and heterogeneous group cooperative learning, having clear objectives, dependence of the group members to each other, teacher as director and the source of information, individual responsibility, rewarding the group success and assessment of their performance as a group (Saif, 2013).

The importance of cooperative learning experiences is beyond the improvement of education, increasing the students’ achievement and making more productive the work of teachers; however, these activities are more valuable per se. Cooperation for humans is as important as breathing. The ability to collaborate with others is the cornerstone of stable families, job success, successful membership in the group, important values and beliefs, friendships and doing the job of the community. If a student fails to apply his/her knowledge and skills in interaction with others, this knowledge has no use for him/her. If an engineer, secretary, accountant, teacher or mechanic fail to use cooperative skills necessary for applying his/her knowledge and technical skills in relation with his/her colleagues, family, society and friends, the training of such a person will be in vain. The most logical way to emphasize on the use of cooperative skills in working conditions is to organize the essential part of academic learning opportunities cooperatively.

In this case, students can learn the necessary technical knowledge and skills in the future practical situations using cooperative working with their classmates. Nothing is more important for a person to learn to apply his/her knowledge in cooperative interactions with others (Johnson and Johnson, 1980). In the cooperative learning group, students usually work together in a small group for group rewarding. This means that to obtain a reward, members who have a high ability work with members that their ability is low. Such a structure enables students with high ability to help students with lower ability and their activity is encouraged (Slavin, 1983, quoted in Gage and Berliner, 1984, translated by Lotfabadi, 1999).
Researches on buoyancy, instead of focusing on the risk of psychological damage, focus on students’ ability to deal with everyday struggles and educational challenges such as low score and test pressures and anxiety which they confront them (Martin and Marsh, 2008). Students’ unsuccessful return to good scores and appropriate performance in school was a good reason for studying academic buoyancy variable.

When the students who work together cooperatively show more activities in group discussions and debate with each other at a high-level discussion, and when others are talking they listen carefully and create a valuable cooperation (Gillies, 2003; Webb and Forever, 1999). There is no doubt about the effectiveness of cooperative learning methodology in solving students’ educational, social and behavioral problems, because by using mediating variables such as social skills, it helps students solve problems.

In the present study, the effect of the cooperative learning which is an active teaching method on academic buoyancy has been investigated in order to show the importance of cooperative teaching method. Therefore, this study deals with this question: “Is the cooperative learning methodology effective in academic buoyancy?”

**Research method**

The statistical population of the present study consisted of all male students of second period in the primary school in the city of Shahriar in the academic year 2014-2015. Cluster sampling method was used in this study, such that the city was divided into east and west parts, and then, one part was selected. Next, among the schools of the selected part, one school and then one class in that school was chosen. The students of the selected class were randomly assigned to experimental and control groups.

The selected school, considering the first and second periods, had 200 students that the number of students in the second period was 93. Of the students in second period, the students in the sixth grade were selected because of following reasons: 1) The measurement of academic buoyancy requires abstract thinking which the students in the sixth grade of primary school have achieved enough abstract thinking. 2) The sixth-grade students have physically grown enough and are more likely to be bullies at school; also they are the last grade in the primary school, so they have been chosen. The sixth-grade class consisted of 24 students that were randomly assigned to the two experimental and control groups (12 per each group).

The present study is an applied one that has used the pretest and post-test with control group design. This project has made up of two testing groups that both groups were measured twice. The first measurement was done by performing a pre-test and the second measurement by a post-test. To form the groups, using random sampling method, half of the subjects were replaced in the first group and the other half in the second group. The two groups were similar and the measurement of the dependent variable for both of them was conducted at one time under the same conditions. Of these two groups, one group were subjected to the independent variable or experimental variable
and another group remained in the waiting list, were not subjected to any variable and continued its previous routine program.

**Measuring tool**

To collect the required data in this research the following tools have been used: Academic Buoyancy Questionnaire: Martin and Marsh’s (2008) Academic Buoyancy Questionnaire was used, which had four items for self-reporting based on 7-point Likert scale from ‘strongly agree’ to ‘strongly disagree’. The reliability obtained through Cronbach’s alpha coefficient was reported equal to 0.8, and its validity was calculated for items 1 to 4 through confirmatory factor analysis equal to 0.66, 0.67, 0.73 and 0.75 respectively. In Iran the obtained reliability using Cronbach’s alpha coefficient for the total scale was reported equal to 0.87, and its validity through criterion validity and correlation using Pintrich educational questionnaire was reported equal to 0.568.

**Data analysis**

To analyze data, the descriptive statistics including mean and standard deviation and the inferential statistics including univariate analysis of covariance were used. In this study, all of the above analyses were conducted through SPSS software.

**Findings**

The rate of academic buoyancy for pre-tests and post-tests in both experimental and control groups have been presented in Table 1. As can be seen, academic buoyancy shows an increase in pre-test comparing with post-test.

<table>
<thead>
<tr>
<th>Statistical parameter</th>
<th>Group</th>
<th>Test</th>
<th>No.</th>
<th>Mean</th>
<th>Standard deviation</th>
<th>Minimum</th>
<th>Maximum</th>
</tr>
</thead>
<tbody>
<tr>
<td>Academic buoyancy</td>
<td>Experimental group</td>
<td>Pretest</td>
<td>12</td>
<td>20.58</td>
<td>3.87</td>
<td>14.00</td>
<td>26.00</td>
</tr>
<tr>
<td></td>
<td>Control group</td>
<td>Pretest</td>
<td>12</td>
<td>15.00</td>
<td>5.96</td>
<td>5.00</td>
<td>22.00</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Post-test</td>
<td>12</td>
<td>19.83</td>
<td>4.36</td>
<td>12.00</td>
<td>27.00</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Post-test</td>
<td>12</td>
<td>22.16</td>
<td>4.66</td>
<td>14.00</td>
<td>27.00</td>
</tr>
</tbody>
</table>

Table 1. Descriptive statistics of academic buoyancy variables for each group separately
Table 2. Results of covariance analysis to determine the impact of the cooperative learning method on academic buoyancy

<table>
<thead>
<tr>
<th>Variable</th>
<th>Statistical parameter</th>
<th>SS</th>
<th>Df</th>
<th>MS</th>
<th>F</th>
<th>Sig.</th>
<th>Effect size</th>
</tr>
</thead>
<tbody>
<tr>
<td>Academic buoyancy</td>
<td>Pretest</td>
<td>91.84</td>
<td>1</td>
<td>91.84</td>
<td>5.39</td>
<td>0.030</td>
<td>0.60</td>
</tr>
<tr>
<td></td>
<td>Group</td>
<td>95.07</td>
<td>1</td>
<td>95.07</td>
<td>5.58</td>
<td>0.028</td>
<td>0.61</td>
</tr>
<tr>
<td></td>
<td>Error</td>
<td>357.48</td>
<td>21</td>
<td>17.02</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Total</td>
<td>482.00</td>
<td>24</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

As can be seen in Table 2, by eliminating the effect of pre-test and according to the calculated F factor, it is found that there is a significant difference between modified mean scores of the total academic buoyancy of participants according to experimental or control group membership at post-test (P<0.05; F(24, 1)=5.58). There is a significant difference between experimental and control groups. In other words, the cooperative learning method has shown a significant impact on academic buoyancy in the pretest of the experimental group.

Discussion and conclusion

The present study was done to determine the effectiveness of cooperative learning method on academic buoyancy of male students of second period elementary school in the city of Shahriar. In this study, the researcher sought to answer the following question. “Whether is cooperative learning method effective in students’ academic buoyancy?” Statistical analysis showed that cooperative learning is effective in students’ academic buoyancy and as a result, the cooperative learning method has increased academic buoyancy. In explaining this conclusion, it can be said that the cooperative learning approach enhances the perception components of self, cognitive self-awareness, and cognitive thinking controllability, and these concepts increase in this learning method. Academic buoyancy requires accurate cognition of self to be able to solve problems and challenges of education successfully. Self-recognition increases self-efficacy, commitment and control, which in turn increase the academic buoyancy. The results of this hypothesis are consistent with the results found by Dehghani Zadeh and Hossein-Chari, 2012; Karimi, 2012; Barnett, 2012). The use of cooperative and participatory methods in the school creates a sense of responsibility in students, and the use of community teaching methods enhances self-confidence, self-esteem and cooperation. Teachers are recommended to consider all students including weak, average and strong students when they use cooperative learning, and also to encourage students to report the other students’ bullying to adults and school officials, and to use average and easy homework to increase students’ motivation in the classroom, and consequently increasing students’ academic buoyancy. It is recommended that in future studies, teachers and adults’ bullying to students to be examined, as well as this methodology to be applied in other grades and in female students.
References


