EFFECT OF COOPERATIVE LEARNING ON THE SELF CONCEPT OF HIGH & LOW ACHIEVER STUDENTS AT ELEMENTRY LEVEL

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ABSTRACT

The study was focused to see the comparative effect of cooperative learning and lecture demonstration method on self-concept of the students at the elementary school level. The study investigated the self concepts of the students at elementary level. In this particular study all the 5th class students comprised the population of the study. A sample of 40 students was selected randomly from Nayab English medium School Dera Ismail Khan. The instrument was modified version of the Self-description Questionnaire–I prepared by Marsh (1992) which was used to check the academic self-concept of the students. The result shows that the Cooperative learning method was better than the lecture method in the academic self- concepts of the students.

Keywords: *Cooperative learning, Self-concept, Elementary level*

INTRODUCTION

Teaching can be made more effective with the help of teaching methodology. Every researcher proposes different methods of teaching for the students. Cooperative learning is one of the best methods which are almost equally suitable for every subject. There are many ordinary teaching methods like problem solving, lecture method and the discussion method, etc. which are in practice in daily teaching of Pakistani educational institutions. These teaching instructions wrap the limited requirements of pupils in the classroom setting. So there is a need some new teaching methodology which covers the maximum requirement of the pupils. So intellectuals thought about the need of some new teaching strategies which not only for extraordinary students but equally important for average and below average students also. The cooperative learning method covers all above discussed aspects and equally important for all types of students.

Yadav (2001) explained that there are many problem occurs in the class like method of teaching, overcrowded class, planning and management, teacher

centered approach, boring syllabus, a system of assessment and the problem of attracting the attention the students toward mathematics.

Kamran (2012) The search of knowledge is necessary for every Muslim men and women in Islam. It is the responsibility of Government to provide educational opportunity to every citizen. All those nations of the world who lack education, dies soon. Education makes the system of the country, and it shaped the national aims and aspiration of the country. The political, social, economics and religious condition of the country are also influenced by the aim of education.

Objectives of the Study

The main objective of the study was:

- To determine the difference between self concept of high achievers and low achievers of the control and experimental groups taught through cooperative leaning and lecture-cum- demonstration method.

Hypotheses of the Study

The following null hypotheses were tested:

Ho: There is no significant difference between the post academic self-concept scores of high and low achievers of the controlled and experimental group in the whole sample.

H_1: There is a significant difference between the post academic self-concept scores of high and low achievers of the controlled and experimental group in the whole sample.

Significance of the Study

The present study will be supportive for the teachers and also students to improve the academic and self concepts. This study will provide the guideline for teacher trainers, educational psychologist and curriculum designers. This study will be helpful to change the behavior of the students. This study will improve self-concepts and social skills among the students. The importance of the study is very high due to minimum research in this field in Pakistan. This type of research may be conducted for other levels. The curriculum designer may also use the results of this study for the improvement of mathematics course. The finding of the study may helpful for prospective teachers and trainers.

Limitation

There was no standardized instrument for the calculation of self-concept. The Herb-Marsh questionnaire was used to determine self-concept of the students at the elementary school level.

Delimitations of the Study

1. The present study was limited to only private primary schools of Dera Ismail khan.
2. The only 5^{th} class students were taken for the study.

LITERATURE REVIEW

Cooperative Learning

Artz & Newman (1990) Cooperative learning can be defined as "A small group of individuals working jointly to solve a problem and complete task". In cooperative learning model, students work together in collaboration, attainment of objectives is possible in all types of matters.

Cohen (1994) Cooperative learning is a teaching strategy combines different social and academic experience into the classroom activities. Cooperative leaning is different from group work, it is actually "structureing positive interdependance" (Kagan, 1990). Students work on different task jointly. They get benefit from one an other resources, experiences, skills, informations and monotering one an other's activities in cooperative learning (Chiu, 2000). "Every one succeeds when the group succeeds" (Slavin, 1995).

Gilmer (2010) Students centered teaching methods are populer among pakistani teachers, due to no opportunity of training and refresher courses among the teachers. These courses give over emphsis on prescribed text books. When students are placed totether in class room in group shape, may not be cooperative in nature though, they work together but not having shared goals. This types of groups may be project groups, reading group, but not cooperative group. The traditional teaching models promote competition among the students. The students work on joint task in collaborative leaning, while in cooperative learning, task are assigned to the students indiviually but they have shared goals. This is the difference between two techniques of learning techniques.

Iqbal (2004) Cooperative means work together and the individuals having the common goals. The word cooperation having different meaning and interpretation with respect to economic, social and biological point of view. In the social context, cooperation means individuals having mutual interest for all participants. In economical point of view, cooperation means joint effort towards production, purchase and distribution. In a biological context, cooperation can be defined as "sensible and insensible" behavior of living organisms for their survival (pp.14).

Self Concept

Anderson (1953) A method of teaching in which there is one way communication from the teacher side and most of the time students are involved in academic tasks, it will produce high order thinking and verbal ability among the sudents. Similerly if the students are less involved in academic activities, they will have less verbal ability e.g lecture method and film etc. While two way communication gets the same results when all the students are involved mostly time on the task. The research reveals that the students, who are more involved in task, it will increase academic self-concept among the students. The students who are less involved in academic avctivities having less academic self concept. So the self-concept of the students is directly related with task and monitering all the activites by the teacher side and vice versa.

Bray & Kehle (2011) Classroom in which learner attainment is at a high level then there exists a positive interaction among the learners. If there exist positive contact of students in the classroom through cooperative learning then they surprisingly more academic self concepts. Classroom in which negative communication or hostility occurs contribute unhappiness, separation and social anxiety as well as poor educational enactment.

Coleman (2008) indicates that many conditions can make better the situation of self concepts. When some one consider that he/ she is a part of that particuler group, having respect and acceptance in the group.
Cooperative learning fulfill all the above discussed conditions and improve the academic self concept of the students.

Hamachek as cited by Aasma-Tuz-Zahra (2010) Self-concept can be explained as "an aggregate of ideas and attitudes which we have about our-selves at a particular time".

Iqbal (2004) cooperative-learning technique is far-better teaching techniques for the subject of mathematics. The low achiever of cooperative group has significant superiority over low achiever of traditional group. Whereas high achiever belong to cooperative group or traditional group their retention power remain same.

Khan (2012) in school situations students have to complete his/her syllabus with in fixed time schedule, so it is very difficul to a teacher to pay individual attention to all students, but it is possible only and only with the concept of cooperative learning methods. Cooperative-learning technique stresses to assist the students in that very difficult situations.

Kiani, Malik, & Ahmad (2012) there are three goals of teaching mathematics at the elementary level in teaching learning process. First goal is to study essential concepts that provide the basis for understanding mathematics and they could use these concepts in words and symbols. Second goal is to utilize afresh gained data and concepts in the new setting and the third and last goal is to improve the capability among the students to solve problems in various teaching situations.

Robin, (1999) Showed That Cooperative learning produces psychological process among the students. The specific group members considered him as the part of the respective group. This identification affects the group expectation, group goals and self- concepts among the group members. The research also showed that there is positive relationship between cooperative learning and self concept, academic goals and academic achievements.

Sanchez and Roda (2007) conducted a study on academic achievement and self-concept among the primary school students, Self - Description Questionnaire was used to determine the self-concepts of the students in the subject of mathematics. Educational performance and self-concept has a close relationship with each other. Concerning this research study it is concluded that there is a positive relationship between academic self-concept and general attainments in language and subject of mathematics.

Tedesco (1999) worked on the Cooperative Learning and Self-Esteem and he initiate that the students who mutually work in the same place, social skills can be developed among them. All these students who use these idea have gain multi culture, human races, individual, group and organizational development. They

also develop the skill of problem solving, mutual exchange of ideas and sympathetic to each others in teaching learning process.

Keeping in view all the statements it is decided that cooperative-learning promote a positive effect on self -concepts and educational attainment of the students at elementary level.

RESEARCH METHODOLOGY

Population

All the students studying in private school at the elementary level comprise the population of the study.

Sample

The Nayab English Medium School (private) was selected on a convenient basis for the research. It is a co-education institution. A random sample of 40-students (26 male and 14 female) of class 5^{th} was selected from the school. This random selection was made by bowl method. The students' ages were from 11 to 13 years.

Research Instrument

Two research instruments were used in this study. One was the adapted version of the Self- Description Questionnaire–I prepared by Herb Marsh (1992) to measure academic self-concepts of the students. Academic self- concept scale contains 25-items, eighteen were positive and seven represent the negative behavior of the respondent. The original questionnaire was 8-point rating scale consisting of a total 86-item. A modification was made in SDQ-I to use in Pakistan. It was translated into Urdu language for students' understanding. Responses were delimited into 5-point Likert scale.The reliability of the modified versions of the SDQ-I's was checked through test retest method. The reliability coefficient was 0.85. The second instrument was a post-test to find the academic achievement at the end of the experiment. The validity of the post-test was assured through 40 subject experts of mathematics. The face and content judgment was made through the mathematics subject teachers at the elementary school level. The 16% items were deleted as a result of this judgment. Reliability of the post-test was assured through research experts of the Gomal University and it was found to be 0.92.

Procedure of the study

First of all, the whole sample was given a pre-test to divide it into two equated groups. One group was called controlled and the other as experimental. Both the groups were similar except for the method of teaching. The Control group was taught with the lecture demonstration method while the experimental group was taught with the cooperative learning method. Both the groups were taught with the same teacher to control the teaching. The treatment of both the groups was continued for a period of 52-days. At the end of treatment, both the instruments were distributed among the participants of both the groups. Post-test was to check the academic achievement and SDQ-I was to check the academic self-concept of the students after the treatment.

Analysis of Data

After collecting the data the scores were presented in the data matrix form on SPSS (version 17.0). The data were analyzed in order to test the hypothesis. Descriptive statistics (Mean, Standard deviation) and inferential statistics (t-test and ANOVA) were used to check the significant mean differences between the two groups at $\alpha = 0.05$ (level of significance).

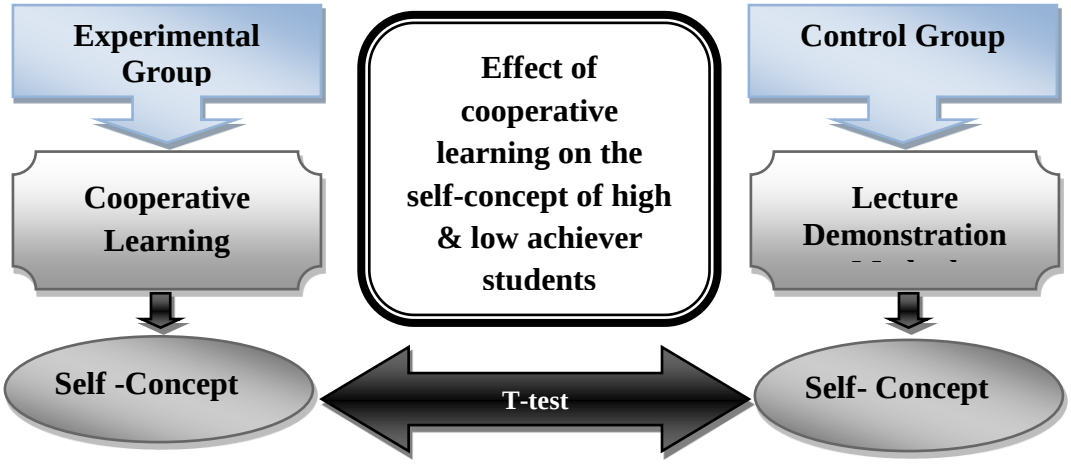

Table # 1 Post-test (High Achiever) average scores of control and experimental groups in comparison under controlled and experimental conditions

Post- test (High Achiever)	Groups	N	Mean	Std. Deviation	Std. Error Mean	t-value	p-value
	Control	13	23.3846	1.55662	.43173	-1.309	0.201

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	Control	13	23.3846	1.55662	.43173	-1.309	0.201
	Experimental	17	24.3529	2.28968	.55533		

Table No.2 indicates the post-test (High Achiever) average scores of control and experimental groups in comparison under controlled and experimental conditionswas found not significantly different as a P - value greater than the level of significance i.e. 0.201>0.05. Hence both groups are completely identical.

Table # 2 Post-test (Low achiever) average scores of Control and Experimental groups in comparison under controlled and experimental conditions

Post-test (Low Achiever)	Groups	N	Mean	Std. Deviation	Std. Error Mean	t-value	p-value
	Controlled	6	13.8333	2.22860	.90982	-2.413	0.052
	Experimental	2	18.000	1.41421	1.00000		

Table No.2 indicates the post-test (Low achiever) average scores of Control and Experimental groups in comparison under controlled and experimental conditions was found not significantly different as a P - value greater than the level of significance i.e. 0.052 >0.05.Hence both groups are completely identical.

Table # 3 Post academic self-Concept (Low scorer) of Control and Experimental groups in comparison under control and experimental conditions

POST_LowASC_2	Groups	N	Mean	Std. Deviation	Std. Error Mean	t-value	p-value
	Control	14	3.2200	.11923	.03187	-0.779	0.447
	Experimental	5	3.2720	.15336	.06859		

Table No.3 indicates the post academic self-Concept (Low scorer) of Control and Experimental groups in comparison under control and experimental conditions was set up not significantly different as a P - value greater than the

level of significance i.e. 0.447 >0.05. Hence both groups are completely identical.

Table # 4 Post academic self-Concept (High scorer) of Control and Experimental groups in comparison under control and experimental conditions

	Groups	N	Mean	Std. Deviation	Std. Error Mean	t-value	p-value
Post_High_Asc	Control	6	3.8800	.00000	.00000	-7.895	0.000
	Experimental	15	3.8800	.00000	.00000		

Table No.4 indicates the post academic self-Concept (High scorer) of Control and Experimental groups in comparison under control and experimental conditions was found significantly different as a P - value less than the $\alpha = 0.05$ value i.e. 0.000 <0.05. Hence both groups are not completely identical.

FINDING

1. The analysis of post-test (High Achiever) scores of control and experimental groups in comparison under controlled and experimental conditions shows that p = 0.201>0.05 which shows that both groups are completely identical (See Table 1). Hence the null hypothesis 1 was accepted.

2. The analysis of post-test (Low achiever) average scores of Control and Experimental groups in comparison under controlled and experimental conditions show that p = 0.052 >0.05. which means that both the groups are completely identical (See Table 2). Hence the null hypothesis 2 was accepted.

3. The analysis of post academic self-Concept (Low scorer) of Control and Experimental groups in comparison under control and experimental conditions was set up not significantly different as a P - value greater than the level of significance i.e. 0.447 >0.05. Hence both groups are completely identical(See Table 3). Hence the null hypothesis 3 was accepted.

4. Table No.4 indicates the post academic self-Concept (High scorer) of Control and Experimental groups in comparison under control and experimental conditions was found significantly different as a P - value less than the $\alpha = 0.05$ value i.e. 0.000 <0.05. Hence both groups are not completely identical. Hence the null hypothesis 4 was rejected.

DISCUSSION

The result of the study shows that cooperative learning average results was better than the traditional lecture demonstration method for academic self- concepts of the students at elementary school level in the subject of mathematics. But theseresult was not so significant in case of high and low achievers in control and cooperative group.These results was supported by Iqbal (2004) who worked on the effect of cooperative learning on academic achievement of high and low achievers of secondary school students in the subject of mathematics. His research results also supported the present study results. The results are also in line with the studies of Zakaria & Iksan (2007) , Brandt & Ellsworth (1996), Zisk, (1998), Sanchez & Roda (2007).

The results of Post academic self-Concept test scores of Control and Experimental groups shows thatcooperative learning makes the self-concept better than the traditional lecture method. These results are supported by the studies of Adesoji & Ibraheem (2009),Adeyemi, (2008), Zisk, and Sanchez & Roda (2007).

CONCLUSIONS

The present study investgate the difference between cooperative learning and lecture demonstration method on self- concept of students at the elementary school level. The result shows that the Cooperative learning method was better than the lecture method in the enhancement of self-concepts of the students.

For the determination of difference between cooperative learning and lecture demonstration method on self- concept of high and low achievers, the result shows that there was no difference between two methods, while the analysis of post self-concept (High Achiever) scores of control and experimental shows that there was a significant difference between the two groups, while on self-concept (Low achiever) scores of Control and Experimental groups, the result shows there was no significant difference between the two groups.

RECOMMENDATIONS

In this research study following recommendations are made in the light of conclusions.

- This reseach shows that for the subject of Mathematics cooperative learning technique is too much suitable than lecture-demonstration method. Therefore, to enhance the self-concept of the students the mathematics teachers may

apply cooperative learning technique for better resu;ts in teaching learning process.

- Results of the this study may change the teaching and training pattern of the teachers training institutions.

REFERENCES

Adesoji, D. A., & Ibraheem, D. L. (2009). Effect of Student Team Achievement Division Strategy and Mathematics Knowledge on learning outcome in Chemical Kinetics. *The journal of international Social Research*, 2/6.

Anderson, T. (1953). Teaching of Foreign Language in the Elementary School. *Boston*: Health.

Artz, A. F., & Newman, C. M. (1990). Cooperative Learning. *Mathematics Teacher, 83*, 448-449.

Brandt, F., & Ellsworth, N. J. (1996). Effects of Cooperative Learning on the Academic Achievement and Self-Esteem of Urban Adolescents with Learning Disabilities. *A Multidisciplinary Journal*, 7 (1) , 9-13.

Bray, M. A., & Kehle, T. J. (2011). The Oxford Handbook of School Psychology. New York: Oxford university Press.

Chiu, M. M. (2000). Group problem solving processes: Social interactions and individual actions.

Cohen, E. G. (1994). *Designing Groupwork Strategies For The Hetrogenious Classroom* (2nd ed.). New York: *Teachers College Press*.

Coleman, B. (2008). Successful White Teachers of Black Students: Teaching Across Racial Lines in Urban Middle School Science Classroom. *University of Massachusetts Amhers*. Ann Arbor: Proquest Information and learning company.

Gilmer, P. J. (2010). Transforming University Biochemistry Teaching Using Collaborative learning and teachnology (1st ed.). *New York: Springer*.

Kagan, S. (1990). The structural approach to cooperative learning. *Educational Leadership, 47(4)*, 12-15.

Kamran, Q. M. (2012). A Comparitives Study of the Contribution of Public and Private School in the promotion of education. M.Ed Thesis, I.E.R *Gomal University, Dera Ismail Khan* (K.P.K) Pakistan

Khan, S. A. (2012). The effect of cooerative learning on academic achievement of low achievers in english language in India. 235-243

Kiani, M. N., Malik, S., & Ahmad, S. I. (2012). Teaching of Mathematics in Pakistan. *Language in India*, 12, 293-305.

Marsh, H. (1992). *Self Research center*. Retrieved May 12, 2012, from Oxford university Web site: http://www.self.ox.ac.uk/

Robin, L. (1991). Cooperative Learning, Self Concept And Academic Achievement: A theoretical argument for self concept as mediating the relationship between cooperative learning and academic achievement. New York: *Columbia University*.

Sanchez, F. P., & Roda, M. S. (2007). Relationships between self concept and academic Achievement in primary Students. *Electronic Journal of Research in Educational psychology Psychopedagogy*, 95-120.

Slavin, R. E. (1995). Cooperative Learning.Theory,Research and practice (2nd ed., Vol. 48). USA: *Allyon and Bacon*.

Tedesco, L. M. (1999). The Effects of Cooperative Learning on Self-Esteem: A Literature Review. Master's Thesis, *Dominican College of San Rafael*., 30.

Yadav, M. (2001). Teaching of Science. New Delhi: *Anmol Publications*.

Zahra, A. T. (2010). *Relationship Between Self Concepts and Academic Achievement Of female Bachelor Degree Students*. Retrieved 08 17, 2012, from http://eprints.hec. gov.pk/6463/1/520S.htm

Zisk, J. (1998). The Effects off Cooperative Learning on Academic Self-Concept and Achievement of Secondary Chemistry Students. http://siteched.org /research/D.