

EFFECTIVENESS OF COOPERATIVE LEARNING APPROACH (JIGSAW-II WITH REWARD) IN ENHANCING THE ACADEMIC ACHIEVEMENT OF LEARNERS IN LEARNING SOCIAL SCIENCE AT THE SECONDARY LEVEL

Research
Paper

ABSTRACT

The present study aims at finding out the effectiveness of one of the cooperative learning approaches namely Jigsaw-II with reward over the traditional method in teaching social science. For this purpose, cooperative terms were formed based on the annual examination scores. The randomized pre-test, post-test, control group design was employed. The VIII Std. students of Alagappa Model Higher Secondary School formed the control and experimental groups. Each group consisted of 20 learners. The 't' test analysis reveals the supremacy of Jigsaw-II with reward approach over the conventional method. There is a wide scope for the application of Jigsaw-II with reward approach in high schools in teaching social science.

INTRODUCTION

The term 'cooperative learning' is an instructional method in which the students work in small groups. Cooperative learning refers to four quite distinct things. It refers to

1. Cooperative behaviour, that means working with or helping others.
2. Cooperative incentive structure, in which a group of two or more individuals are rewarded based on the performance of all the group members.
3. Cooperative task structure, in which a group of two or more individuals can or must work together but may or may not receive rewards based on their group's performance and
4. Cooperative motive, the predisposition to act cooperatively or altruistically in a situation that allows individuals a choice between cooperative, competitive, or individualistic behaviour.

Cooperative learning is essentially a small group instructional technique. In a class, for example, 40 students may be divided into eight groups, five in each group and members in each group study together and receive recognition based on the sum of their individual scores. When individuals work together for a common goal, they are dependent on one another's efforts to achieve that goal. This interdependence motivates the individuals to

1. encourage one another to give whatever help the group needs to succeed.
2. help one another to do whatever the group needs to succeed and,
3. like one another, because individuals like others who help them achieve their goals and because cooperation typically increases positive contact among group members.

The new approach, namely cooperative learning-approach is wider in application in the United States and its importance in India has been realized in recent times. Cooperative learning approaches provide opportunities for intellectual, psychological and social development of learners and enable all the learners in the classroom work together and find solutions to the problems on the basis of team work. The psychological and social development of learners is fulfilled through the cooperative learning approach. Hence, a study on cooperative teaming approaches is highly useful and meaningful. In the present study, an attempt is made to find out the effectiveness of one cooperative learning approach namely, Jigsaw-II with reward approach in learning social science at the secondary level.

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REVIEW OF RELATED LITERATURE

Friedman (1989) presents a number of ideas concerning how small group instruction can be implemented in college level music classes. She offers advice on using small group work, focusing on the issues of freedom, trust and success. **Miritiz Mary Ann** (1989) assessed the impact of cooperative learning strategies on reaching achievement. The study concluded that there was a significant effect concerning the use of cooperative learning on students' achievement. **Allen Eugene** (1990) found the effectiveness of cooperative learning in improving the academic achievement of learners. **Delores** (1990) found a greater impact of cooperative learning approach on academic achievement. **Dawn** (1991) found that cooperative learning is an effective instructional technique for application in the elementary spelling classroom. **Judith Rae** (1992) analyzed the effects of cooperative learning groups on social studies achievement. The study concluded that cooperative learning was more effective than traditional instruction in promoting social studies achievement for low socio-economic students.

OBJECTIVES OF THE STUDY

The major objective of the present study is to find out whether the Jigsaw-II with reward approach is more effective than the traditional approach.

HYPOTHESES

- (i) There exists significant difference between the pre and post mean scores of the Experimental group.
- (ii) The Control and Experimental groups differ in the academic achievement scores.

METHODOLOGY

In the present study the non-randomised control group pre-test - post-test design was adopted. The groups were formed as per the requirements of the cooperative learning approach.

COMPOSITION OF EXPERIMENTAL AND CONTROL GROUPS

In the present study, the experimental group and the control group were selected. The two groups were composed of students from Alagappa Model Higher

Secondary School, Karaikudi. The VIII standard learners were considered for this purpose. It is pointed out that although the two groups were equal in terms of achievement scores, the subjects in each group were not equal and they varied in terms of their academic abilities. The composition of cooperative teams was made on the basis of the divergence of the achievement scores of learners. Once the two groups are formed, the next step is to name the experimental and control groups. The application of randomness led to the classification of Control and Experimental groups.

COMPOSITION OF COOPERATIVE TEAMS IN THE EXPERIMENTAL GROUP

The Experimental group is formed on the basis of the academic achievement scores of the students. For the experimental group which was subjected to Jigsaw-II with reward, a total of 20 VIII std. learners was chosen from Alagappa Model Higher Secondary School, Karaikudi. The 20 learners were grouped into 4 teams with 5 members in each team based on the VIII standard annual examination scores of the learners in social science. For example, the first highest scorer is assigned to the first team, the second highest scorer to the second team, the third highest scorer to the third team and fourth highest scorer to the fourth team. The fifth scorer is assigned to the fourth team, the sixth scorer to the third team, and so on. This sort of assignment of subjects would enable achieving considerable equality among the teams in each group, but at the same time, heterogeneity of learner ability within a team is maintained as per the requirement of the cooperative learning approach.

SELECTION OF CONTROL GROUP

The control group consisted of 20 learners studying in the same class of the same school. The group was exposed to the traditional method of instruction and no novel treatment was given to this group.

RESEARCH TOOLS

The criterion test was developed and validated. The number of questions included in the test was 50. The internal consistency method yielded a correlation coefficient of 0.761. Concurrent validity was established

by correlating the test scores with the VIII standard annual examination scores in social science. The correlation coefficient computed to be 0.782 indicates high validity of the criterion test. In order to increase the reliability and validity of the post-test performance and eliminate the testing effect of the pre-test, another criterion test was constructed. This test was a slight modification of criterion test - I. The same question type and the number of items were used for this test. The procedures adopted in developing the pre-test tool were employed while constructing this tool. The application of internal consistency method yielded a reliability coefficient of 0.764. Face validity, content validity and intrinsic validity of the tool were established.

RESULTS AND DISCUSSION

The results of the study are presented below in tabular columns with interpretation.

Table- 1
ACADEMIC ACHIEVEMENT
OF THE EXPERIMENTAL GROUP
(JIGSAW-II WITH REWARD APPROACH):
SIGNIFICANCE OF DIFFERENCE BETWEEN
PRE AND POST-TESTS

Test	M	SD	r	't'
Pre-test	40.9	10.24	0.43	10.67*
Post-test – I	72.4	13.82	0.83	2.92*
Post-test – II	67.2	13.4	0.47	9.43*
Pre-test	40.9	10.24		

* Significant at 0.01 level.

- (i) The experimental group shows significant difference between its pre-test and post-test – I mean achievement scores ('t'= 10.67, significant at 0.01 level). The better performance of the experimental group is found out in the Post-test-I when compared with its Pre-test performance. This reveals the effectiveness of Jigsaw-II with reward approach.
- (ii) There exists significant difference between the Post-test-I and Post-test-II mean achievement scores of the experimental group as revealed by the 't'

value = 2.92 which is significant at 0.01 level. It is observed that the academic performance of the experimental group is better in Post-test-I when compared with its Post-test-II performance.

- (iii) The experimental group differs in its Pre-test and Post-test-II performance ('t'= 9.43, significant at 0.01 level). The group shows better performance in Post-test-II than in its Pre-test performance. This shows the effectiveness Jigsaw-II with reward approach in enhancing the academic achievement of the learners.

Table- 2
PRE-TEST ACADEMIC ACHIEVEMENT:
COMPARISON BETWEEN CONTROL AND
EXPERIMENTAL GROUPS

Group	M	SD	N	't'
Control	44.4	10.61	20	
Experimental	40.9	10.24	20	1.06

- (i) The control and experimental groups do not differ in their Pre-test mean achievement scores as testified by the 't' value= 1.06, which is not significant at 0.05 level.
- (ii) The overall conclusion is that the homogeneity of the two groups is maintained during the Pre-test period. This proves the true composition of the control group and the experimental group.

Table- 3
POST-TEST – I ACADEMIC ACHIEVEMENT:
COMPARISON BETWEEN CONTROL AND
EXPERIMENTAL GROUPS

Group	M	SD	N	't'
Control	47.6	9.36	20	
Experimental	72.4	13.82	20	6.64*

* Significant at 0.01 level

There exists significant difference between the control group and the experimental group in their mean achievement scores as revealed by the 't'= 6.64, which is significant at 0.01 level. From the table, it is inferred that

the experimental group excels the control group in academic performance. This reveals the effectiveness of the cooperative learning approach, namely Jigsaw-II with reward approach over the traditional method of instruction.

Table-4
POST-TEST – II ACADEMIC ACHIEVEMENT; COMPARISON BETWEEN CONTROL AND EXPERIMENTAL GROUPS

Group	M	SD	N	't'
Control	44.65	12.26	20	
Experimental	67.2	13.4	20	5.55*

* Significant at 0.01 level.

- (i) The control group and the experimental group differ in their Post-test-II mean achievement scores as evidenced by the 't' value= 5.55 which is far greater than the table value at 0.01 level of confidence.
- (ii) The experimental group excels the control group in the Post-test-II performance. This reveals the effectiveness of the Jigsaw-II with reward approach over the conventional method of teaching.

CONCLUSION

The present study clearly reveals the supremacy of Jigsaw-II approach over the traditional method of instruction. It is found that Jigsaw-II with reward approach is more effective than the traditional approach in enhancing the academic achievement of learners. The National Policy on Education - Programme of Action (1992) observes that teaching at secondary level should primarily be directed towards problem solving and decision making through the learning of key concepts. The instructional approaches followed in the classroom should develop in the child the spirit of enquiry, creativity, objectivity, scientific temper and other desired values. The curriculum planners and educational policy makers may take note of this finding and restructure the curricula by incorporating cooperative learning approaches as appropriate methods of instruction. The curriculum of various courses should be activity-based rather than knowledge- based.

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Achievement Motivation....

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- d) 'The variables, 'No. of siblings in the family' does not have any impact on the students' achievement motivation.

EDUCATIONAL IMPLICATIONS OF THE STUDY

- a) The achievement motivation may be improved among the students of (31.49) low achievement category level.
- b) Steps may be taken to improve the achievement motivation of Tamil medium students. They have to be conscientiated that they too can achieve on par with their English medium counterparts.
- c) The teachers working in government schools should be trained in motivation techniques.

CONCLUSION

The achievement motivation of fishermen community was measured in the present study. It is a community which does not realize the importance of education and most of the parents stop the education of their children at the primary level. To make them realize the importance of achievement motivation for success in education, this study was conducted and no doubt, this would be an eye-opener in this regard.

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