



ORIGINAL RESEARCH PAPER

Education

ATTITUDE OF HIGHER SECONDARY SCHOOL STUDENTS ON JIGSAW II AND LEARNING TOGETHER OF COOPERATIVE LEARNING APPROACHES

KEY WORDS: Jigsaw II, Learning Together and Cooperative Learning Approaches

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ABSTRACT

The main aim of this paper is to the attitude of higher secondary school students on Jigsaw II and learning together cooperative learning approaches with reference to certain demographic variables such as gender, community, nature of residence, educational qualification of father & mother, monthly income of the family, number of sibling and nature of the family. Survey is defined as a research method used for collecting data from a pre-defined group of respondents to gain information and insights on various topics of interest. Here for the present research, the researcher has used descriptive survey method to assess the attitude of the higher secondary students on Jigsaw II and learning together cooperative learning approaches. The Attitude Scale for Students on Cooperative Learning Approaches- (ASS-CLA) is the research instrument of the present research. The statements in ASS-CLA are given with five point scale such as strongly agreed, agreed, un-decided, disagreed and strongly disagreed with a score of 5,4,3,2 and 1 respectively. The sampling technique employed in this research is stratified random sampling technique. For the present research, the investigator has chosen total 200 eleventh standard Biology English medium higher secondary students of Alagappa Model higher secondary school, Karaikudi, Sivagangai District of Tamil Nadu has been selected as sample for this research. 32.5 % and 27.5 % of higher secondary students are strongly agreed that Jigsaw II and learning together of cooperative learning approach has created positive interdependence among them, developed the social skills, led fruitful interactive discussion, collectively learning and adapted to environmental changes and helped the teacher to manage the class room and involved active participation in learning, created leadership quality and group rewards are given individual recognition. This research study has concluded that majority higher secondary students are having a good attitude on Jigsaw II and learning together cooperative learning approaches.

INTRODUCTION:

Learning is the process of acquiring new, or modifying existing, knowledge, behaviors, skills, values, or preferences. The ability to learn is possessed by humans, animals, and some machines; Human learning is a process of acquiring knowledge. Our behavior, skills, values and ethics are acquired when we process information through our minds and learn. In schools, workplaces, and trainings, people are instructed in various things, but they're not usually given with how to learn and what are the suitable methods or approaches of learning for sustainable learning. Tune to this line the researcher has realized that quality improvement in education encompasses the all-round development of learners. This requires a multi-pronged approach aiming at quality curriculum and its effective transaction encompass with certain approaches in an enabling environment. Realizing the importance, the researcher has would like to make out the cooperative learning as a successful teaching approach in which small teams, each with students of different levels of ability; use a variety of learning activities to improve their understanding of a subject. And also the researcher has to locate the attitude of higher secondary school students on cooperative learning approaches.

COOPERATIVE LEARNING:

Cooperative Learning is a systematic pedagogical strategy that encourages small groups of students to work together for the achievement of a common goal (Bruffee, 1993). Beth Lewis (2019) defined that cooperative learning is a form of active learning where students work together to perform specific tasks in a small group. Cooperative learning refers to a method of instruction whereby students work together in groups to reach common goals. Akthar Khan (2019) defined that cooperative learning aims to organize class activities. Also, it aims to into a social and educational learning experience. Also in it, students work together in groups to perform a task.

Jigsaw II of Cooperative Learning Approach; Slavin (1990) developed the Jigsaw technique into 'a more practical and

easily adapted from Jigsaw II. As in the original technique, Jigsaw II may be used when the material to be studied is in written narrative form, and instructional materials may be a chapter from a textbook, a story or something similar. Jigsaw II differs from the original in that all students read all the material to be studied, rather than a section from it. In Jigsaw II, each group member is supplied with a different 'expert sheet' which requires the reader to focus on the material in a particular way or in order to answer a question. As with the original jigsaw, expert groups form to discuss their topic or issue before returning to their base groups where they take turns teaching their peers about their topic. The original Jigsaw requires that each chunk of material be self-contained which has obliged some teachers to prepare special materials for Jigsaw use. With Jigsaw II, however, all read the whole which 'may make unified concepts easier to understand' (Slavin, 1990). Jigsaw II does not entail preparation of special materials.

Learning Together of Cooperative Learning Approach;

The learning together method is a technique developed by Johnson and Johnson (1991). The most important features of this technique are the existence of the group goal and sharing the opinion and materials, division of labour and the group reward. The most important properties of this technique are the existence of the group goal and sharing the opinion and materials, division of labour and the group reward. Learning together model of group learning is well documented as an effective teaching and learning method. The term group learning is widely known as cooperative learning that refers to working together in small groups to achieve a common goal. According to Johnson and Johnson (1994), group learning is an instructional method in which students are grouped in small learning teams and work in cooperation with each other to perform a task presented by the teacher. Group learning is a learning together to help each other, share with each other and facilitate each other's learning to achieve a shared goal. Johnson and Johnson indicate that learning together requires elements of positive interdependence, individual accountability, face-to-face

interaction, appropriate use of group skills and group processing to achieve the best group results by means of mutual assistance among the group members.

Cooperative learning approach in this context, it is a boon to the teachers. Cooperative learning approach is a meaningful approach in teaching-learning process in Indian context, when compared with large group and individualized instruction methods. The cooperative learning not only focuses on the students' achievement but also students' social relationships. Here the students are likely to encourage and help one another to learn and there is a wider scope for the development of cooperative and social spirits. In cooperative learning process, the pupils themselves play an increasingly responsible role. This may facilitate responsible self-direction among the peers. Education stresses the importance of cooperative learning to enhance the students' overall development. Realizing the importance, the researcher has to know and assessing the attitude of students towards the cooperative learning approach for better improvements in future.

OBJECTIVES:

To find out the attitude of higher secondary school students on Jigsaw II and learning together cooperative learning approaches.

HYPOTHESES:

There is significant difference on attitude of higher secondary students on cooperative learning approaches with reference to certain demographic variables such as gender, community, nature of residence, educational qualification of father & mother, monthly income of the family, number of sibling and nature of the family and there is significant influence and significant contribution of above selected personal variables on attitude of higher secondary students on cooperative learning approaches of Jigsaw II and learning together; There is significant correlation on attitude of higher secondary students between Jigsaw II and learning together cooperative learning approaches.

METHOD OF THE RESEARCH:

Survey is defined as a research method used for collecting data from a pre-defined group of respondents to gain information and insights on various topics of interest. Here for the present research, the researcher has used descriptive survey method to assess the attitude of the higher secondary students on Jigsaw II and learning together cooperative learning approaches.

RESEARCH INSTRUMENT:

The Attitude Scale for Students on Cooperative Learning Approaches- (ASS-CLA) is the research instrument of the present research. The statements in ASS-CLA are given with five point scale such as strongly agreed, agreed, un-decided, disagreed and strongly disagreed with a score of 5, 4, 3, 2 and 1 respectively. The negative statements are scored reversely. After pooling 60 items of cooperative learning approaches statements in ASS-CLA, the researcher has obtained field expert opinion about the statements regarding the relevancy of the cooperative learning approaches. The field experts consist from the teacher educators, educationalist, psychologists, and school administrators, principals and teachers. Based on the suggestion and opinion given by the field experts about the pooled statements by the researcher, necessary omission and addition were made. And finally 48 items out of 60 items of cooperative learning approaches statements were taken in to item analysis for further validation.

Item Analysis: It is an important analysis to increase test effectiveness. Each items contribution is analyzed and assessed. To write effective items, it is necessary to examine whether they are measuring the fact, idea, or concept for

which they were intended. This is done by studying the student's responses to each item. When formalized, the procedure is called "item analysis". It is a scientific way of improving the quality of tests and test items in an item bank. An item analysis provides three kinds of important information about the quality of test items. For finding the truthfulness of test items and interconnectedness of different items in the same questionnaire, item validity was calculated by using item analysis as it is very essential for selecting items to the final scale. 48 items from the pilot stage was given to 30 higher secondary students. From the responses obtained, 'r' is calculated by correlating the individual item score and the corresponding component score. The correlation coefficient at 5% level of significant is 0.42 to 0.90 (Best, 1989). Finally the item having 'r' values between 0.4 and 0.9 are selected for final scale. For further improvement and refinement the developed scale was administered again to the sample was calculated with 't' values at 0.05 level of significance.

Reliability: The Split-Half Method and Kuder Richardson Method (K-R-20) are used to establish the reliability of the ASS-CLA after Item Analysis. Final format of the ASS-CLA was given to 25 higher secondary school students for establishing the reliability of the scale. The reliability of the ASS-CLA by using split-half method is 0.765 and Kuder- Richardson method is 0.723.

Validity: For ascertaining the validity, the investigator used content validity, face validity and intrinsic validity for the ASS-CLA. The type of items in the ASS-CLA, were validated by the panel of teacher educators, educationists, language experts, and teachers of higher secondary schools. Their suggestions have been taken into account to enhance the content and quality of the items. Therefore, it can be said that the ASS-CLA developed by the investigator possesses content validity. The investigator here assured that by the opinion of the panel of experts such as teacher educators, principals, administrators, educational policy makers and psychologists who are familiar with the subject content, items for assessing cooperative learning approaches statements in the ASS-CLA do possess face validity. The obtained intrinsic validity of the ASS-CLA is 0.875 (using from the value of Split-Half method) and 0.850 (using from the value of Kuder-Richardson method) is high and possesses intrinsic validity.

Sampling and Data Collection:

The sampling technique employed in this research is stratified random sampling technique. For the present research, the investigator has chosen total 200 eleventh standard Biology English medium higher secondary students of Alagappa Model higher secondary school, Karaikudi, Sivagangai District of Tamil Nadu has been selected as sample for this research. The investigator has visited the selected school in person and explained the purpose of the data collection to the higher secondary students before data collection and collected the data through ASS-CLA.

Findings: 32.5 % of higher secondary students are strongly agreed that Jigsaw II and learning together of cooperative learning approach has created positive interdependence among them, developed the social skills, led fruitful interactive discussion, collectively learning and adapted to environmental changes and helped the teacher to manage the class room. 27.5 % of higher secondary students are strongly agreed that Jigsaw II and learning together of cooperative learning approach has involved active participation in learning, created leadership quality and group rewards are given individual recognition. 17.5 % of higher secondary students are strongly agreed that jigsaw ii and learning together of cooperative learning approach has no way to generate new ideas, developed self awareness, created more conflicts and restricted freedom in learning. Only 5 % of higher secondary students are strongly agreed that jigsaw ii and learning together of cooperative learning

approach has an support for slow learners, students with disabilities unable to cop up, grading each other very helpful and helped to reduce the school violence and led to immoral activities.

Based on the mean scores higher secondary students are agreed mostly to the following which is fallen between 4.50 to 3.50: fruitful interactive discussion (3.9), collectively learn and adapt to environmental changes (3.9), group rewards given individual recognition (3.83), opportunity for flexible conservation (3.8), made self interest (3.8), helps the teacher to manage the class room (3.7), students with disabilities unable to cop up (3.75), un support for slow learners (3.7), involved active participation in learning (3.7), given materials remembered longer (3.7), created leadership quality (3.7), accountability to each other found to be less (3.7), helps to develop un-equal status of group members (3.68), not gives equal participation to everyone (3.6), leading to develop cognition(3.6), enjoy the course of action of learning together (3.6), attitude of respecting each other developed (3.6). Based on the mean scores higher secondary students are agreed mostly to the following which is fallen between 3.50 to 2.50: created positive interdependence among us (3.5), developed high level of reasoning skill (3.4), face to face interaction takes place (3.29), promoted give and receive support (3.23), created mutual sharing of ideas (3.23), no way to generate new ideas (3.20), grading each other very helpful (3.15), created more conflicts (3.15), allowed acceptance of ideas from others(3.15), open communication taken place (3.14), continuous learning takes place (3.13), reduced fearless among students (3.10), promoted self esteem, self efficacy and confidence (3.10) and helped to reduce the school violence and immoral activities (3.10).

It is found that the 't' values of attitude of higher secondary students on cooperative learning approaches in respect of educational qualification of father, educational qualification of mother and monthly income of the family is 3.568, 4.256 and 4.282, significant at 0.05 level. The attitude of the literate and semi-literate students of higher secondary students on cooperative learning approaches do vary in respect of educational qualification of father and mother. The mean score of attitude of literate and semi-literate students of higher secondary students on cooperative learning approaches in respect of educational qualification of father and mother is 141.72 & 137.00 and 143.45 and 138.24. Therefore the attitude of higher secondary students with literate father and mother on cooperative learning approaches is better than the semi-literate father and mother. The 'F' value of attitude of higher secondary students on cooperative learning approaches in respect of monthly income of the family is 6.529, significant at 0.01 level. The mean score of attitude of less than 50,000, 50,000 to 1,00,000 and above 1,00,000 income group students of attitude of higher secondary students on cooperative learning approaches in respect of monthly income of the family are 142.20, 141.26 and 136.62. Hence, the attitude of the less than Rs 50,000 income group students of higher secondary students on cooperative learning approaches is better than Rs 50,000 to 1,00,000 income group followed by Rs above 1,00,000. Based on the 't' values, the attitude of the male and female students of higher secondary students on cooperative learning approaches does not vary in respect of gender, community, nature of residence, number of sibling and nature of the family.

With a view to find out the contributions of attitude of higher secondary students on cooperative learning approaches and selected demographic variables to the predicted value of the criterion to stepwise regression analysis was done to attitude of higher secondary students on cooperative learning approaches and selected ten demographic variables of higher secondary students. The regression linear equation is:

$$Y_1 = 156.007 + 1.719 X_1 - 2.399 X_2 - 4.189 X_3 + 8.753 X_4 - 4.195 X_5 + 6.836 X_6 - 0.429 X_7 - 11.439 X_8$$

Gender, educational qualification of father and monthly income of the family of higher secondary students explains positively 2.1%, 5.3% and 7.8% respectively of the variance in percentage with respect to attitude of higher secondary students on cooperative learning approaches. Community, nature of residence, educational qualification of mother, number of sibling and nature of the family of higher secondary students explains negatively 4.7%, 4.7%, 6.4%, 8.1% and 12.7% respectively of the variance in percentage with respect to attitude of higher secondary students on cooperative learning approaches. The gender, educational qualification of father and monthly income of the family of higher secondary students are the positive predictor variables and community, nature of residence, educational qualification of mother, number of sibling and nature of the family are negative predictor variables.

This research has found that there is a positive high correlation (0.615) exists between the attitude of higher secondary students on Jigsaw II and learning together cooperative learning approaches.

CONCLUSION:

This research study has concluded that majority higher secondary students are having a good attitude on Jigsaw II and learning together cooperative learning approaches. Therefore, it is a fine time to inculcate Jigsaw II and learning together cooperative learning approaches in the existing and future curriculum for the better learning of students. The personal variables educational qualification of father and mother and also monthly income of the family have made significant differences on the attitude of the higher secondary students. It is a alarming warning to the nation that those socio economic factors should be addressed and rectified properly by the governing concern with priority basis. At the outset, this research article has concluded that the Jigsaw II and learning together cooperative learning approaches are incredible for students concern for their enhanced learning.

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