The Relative Effectiveness of Using the Jigsaw II And the Traditional Method in Teaching Systems of Linear Equations

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ABSTRACT

This study aimed to compare the relative effectiveness of using the Jigsaw II and the traditional method in teaching systems of linear equations. Specifically this study has the following objectives:

1. To determine the difference between the pre test achievement mean scores of the students exposed to Jigsaw II method and Traditional method.
2. To determine the difference between the pre test and post test achievement mean scores of the students who were exposed to :
   2.1 Jigsaw II method
   2.2 Traditional method
3. To determine the difference between the attitudes toward mathematics of the students who were exposed to :
   3.1 Jigsaw II method before and after the experiment
   3.2 Traditional method before and after the experiment
4. To determine how Jigsaw II and traditional method , in the teaching of systems of linear equations compare in terms of :
   4.1 post test achievement mean scores
   4.2 attitudes toward mathematics after the experiment

This study was conducted at the De La Salle University – Dasmariñas , Cavite using two intact sections of freshman Marketing students who were enrolled in College Algebra during the first semester of the school year 2001-2002.

This study used the quasi-experimental design, known as the Pre test- Post test Non-Equivalent Control Groups Design. It made use of two instruments namely: the achievement test prepared by the researcher, and a validated instrument known as Mathematics Attitude Scale (MAS). The statistical methods used by the researcher are the t-test for independent samples and the t-test for dependent samples. Validation of the achievement test was done through content validation, item analysis and by the Kuder-Richardson Formula 20.

The findings of the study are as follows:

1. There is no significant difference between the pretest mean scores of students who were exposed to the Jigsaw II and the traditional method. The pre test mean scores of the experimental group was 68.03 and the pre test mean score of the control group was 69.3 which yielded a computed t-value of 1.24 which was found to be not significant at 0.05 level of significance.
2. There is a marked significant difference between the pre test and post test scores of students who were exposed to the Jigsaw II. The pre test and post test mean scores of the experimental group yielded a computed t-value of 10.69 which was found to be significant at 0.05 level. On the other hand, there is no significant difference between the pre test and the post test scores of the students who were exposed to the traditional method. The pre test and post test mean scores of the control group yielded a computed t-value of 1.72 which was found not to be significant at 0.05 level.

3. The mean attitude score of the experimental group increased by 5.07 after the experiment and the mean attitude score of the control group increased by 3.85 after the experiment, but both was not found to be significant at 0.05 level.
4. The difference between the post achievement test mean scores of both groups, after the experiment was found to be significant at 0.05 level while the difference between the mean attitude scores of both groups after the experiment was found not to be significant at 0.05 level.

The findings of the study led to the following conclusions on the relative effectiveness of the Jigsaw II model and the traditional method in teaching systems of linear equations:

1. The mean difference between the post tests achievement mean scores of both E and C groups is significant . This means that the Jigsaw II was more effective than the traditional method in teaching systems of linear equations.
2. The mean difference between the MAS mean scores after the experiment of both E and C groups is not significant. This shows that the attitude is not easily affected by any of the teaching methodology- Jigsaw II and traditional method.
3. Both the Jigsaw II and the traditional method improved the attitude towards mathematics of the students.
4. Students from both the E group and C group have favorable attitude towards mathematics.

Based on the findings and conclusions the following recommendations were formulated:

1. Since the Jigsaw II method was found to be more effective than the traditional method, a teacher can make use of the Jigsaw II method in teaching systems of linear equations.
2. Similar studies may be conducted to determine other factors that might affect the performance of the students who will be exposed to Jigsaw II model such as character traits, study habits, and communication skills and others.
3. The study may be replicated using larger sample and longer time frame to investigate the possible effects of time and heterogeneity of samples in students' achievements and behavior.
4. Further studies should be done to test the effectiveness of other cooperative learning techniques in other fields of mathematics and in other areas of science.
5. Seminars on Jigsaw II should be conducted for teachers and student teachers of DLSU-D as alternative method to improve the achievement of the students in class.

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