EFFECT OF COOPERATIVE AND INDIVIDUALIZED LEARNING STRATEGIES ON CRITICAL THINKING AND LEARNING OUTCOMES IN SCIENCE IN RELATION TO INTELLECTUAL ABILITY

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Abstract

The study examined the effect of cooperative and individualized learning strategies on critical thinking and learning outcomes in science in relation to intellectual ability among 9th class students. Based upon previous research literature, this was hypothesized that no significant difference existed between the mean posttest scores of critical thinking, achievement and interest of experimental groups and control group. The pretestposttest control group design was chosen. There were two experimental groups and one control group. Three schools were selected randomly from district Hoshiarpur, (Punjab). From these schools, 34 students in each school were selected using random cluster sampling technique. Total sample was 102. The dependent variables of critical thinking, achievement and interest were measured through self-constructed 36 items of critical thinking, 48 items achievement test and 30 items of interest test were used as a pretest, posttest and delayed posttest. Intelligence test used for classifying the students in high and average ability students. The experiment group 1 was taught through cooperative learning (JIGSAW, STAD, and structural controversy techniques), experiment group 2 was taught through individualized learning (Linear, branching and CAI program) while control group was taught through traditional teaching. The materials were used such as modules for cooperative learning, and frames and CAI for individualized learning for 35 sessions of 40 minutes each. The data were analyzed through mean, SD, skewness, kurtosis and MANOVA, and 0.05 was the selected level of significance. The result showed that cooperative and individualized learning are significantly effective in improving critical thinking, achievement and interest in science of the students, but cooperative learning is more effective as compared to individualized learning. These strategies also showed stable effect at
delayed post test level. At intellectual ability level, students with high ability performed more as compared to students with average ability in critical thinking. Students with high ability performed similar as students with average ability in achievement, and Students with average ability performed more as compared to students with high ability in interest. There was significant interaction effect of treatment variables (cooperative and individualized learning) and ability groups (high and average ability) on critical thinking. There was insignificant interaction effect of treatment variables and ability groups on achievement. There was significant interaction effect of treatment variables and ability groups on interest.

**Key Words:** Cooperative Learning, Individualized Learning, Critical Thinking, Achievement, Interest, Intellectual Ability.