EFFECTIVENESS OF METACOGNITIVE STRATEGIES IN PHYSICS AMONG THE HIGHER SECONDARY STUDENTS

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An experimental study was conducted to check the effectiveness of metacognitive strategies in physics at higher secondary level. The main objectives of the study were (1) To design and implement metacognitive strategies for higher secondary students (2) To determine whether metacognitive strategies are more effective than conventional methods (3) To examine the effects of metacognitive strategies on academic achievement of low achievers and high achievers in learning. Based on the objectives of the study, hypotheses were formulated.

Earlier studies on metacognition were reviewed. The metacognitive strategies were designed with inquiry based learning, cooperative learning and problem based learning. Metacognitive model for achievement in physics at higher secondary level was developed. The investigator constructed and validated five tools. They were 1) Achievement in physics 2) Metacognitive awareness inventory 3) Student attitude towards learning physics 4) Home learning environment and 5) study habit. Students of municipal girl's higher secondary school, Tirunelveli town were constituted the population of the study. Sample students were divided into experimental and control groups. Both the groups were equated based on the pre-test scores.

The control group was taught through conventional method while the experimental group was taught through metacognitive strategies. The experiment conducted for 15 days. In order to find out treatment effects, post-test was administrated to the experimental and control group. Obtained data were statistically analyzed. The results show that experimental group performed significantly better than the control group on post-test. The present investigation conceptualized from the findings that metacognitive awareness influenced on achievement in physics among higher secondary students.