CHAPTER - VII

DISCUSSION, EDUCATIONAL IMPLICATIONS AND RECOMMENDATION FOR FURTHER RESEARCHES

Findings and Discussions:

The discussion and the description of the work done in the previous chapters automatically forces one twowards a conclusive phase. Although to summarize the whole task in to a compact and unique from is not a simple task. Present study deals with Achievement in mathematics and metacognition: A correlational study". Correlationing the large amount of facts and data, as in one hand. Yet is directs the investigator to conclude his findings to give a better glimpse of whole investigation.

Findings in respect of present study are being recorded and discussed as under:

Effect of Group and Sex Variables on Metacognition.

From two way ANOVA results it was found that the main effect of group on metacognition is significant at (P .001). The main effect of sex and its intraction effect with group is not significant. An another result is indicated that the increasement of the age is associated with the increasement in the metacognitive awareness.

According Brown, compione and Murphy (1977) processes as checking, planning, asking question, self-testing and monitoring, ongoing attempts to solve problemss are seen as control components of metacogniti development. From this view it is generalized that as group experience increase, the metacognitive components of students are facilitated. The same view is reflected in the findings of the present study. Further the cognitive and metacognitive competencies are not bounded with the variable sex inspite of biological differences.

Metacognition and Achievement.

Our educators are striving hard to inhence the learning potentiality of our children. It is a fact that if students accept more responsibility for their own

learning, no doubt, it becomes maximum. To become aware about their own cognitive process, which is a process of metacognition, training on the techniques to organise, monitor and modifying their thinking process definitely improve the achievement of student.

Relationship between Metacognition and Achievement in Mathematics.

To find out the role of metacognition on achievement in mathematics the Pearson's product moment correlation was used and the finding are encouraging. Correlation coefficient are calculated for total sample followed by group and sex variables. The result reveals that metacognition is significant and positively related with the achievement in mathematics. The significant relationship envisaged that high metacognitive awareness will lead to high learning performance.

Metacognition and High-Low Achievement Group.

The self reflection strategy is found effective in improving learning performance. Another question arises that whether the high end low groups are differ in turn of their metacognitive awareness or not? To answer this question discriminant analysis was used to find out the actual stratification of the groups on the basis of their metacognitive awareness. It was observed that in case of mathematics achievement metacognition is

a powerful discriminating variable for high and low groups. The result very clearly and authentically proved the important role of metacognition or learning performance.

Relationship between Metacognition and Reasoning Ability.

Flavell (1981) who coined the term metacognition differentiated if from cognitive strategies which he called as cognitive action. According to him cognitive strategies can contribute to performance as well as to monitoring that performance. Monitoring performance is more heavily metacognitive in nature. Therefore the positive relationship between metacognition and reasoning ability is assumed. The present finding is also accepted this assumption. Regarding the relationship between metacognition and reason ability the result indicated a positive relationship but the coefficient was not significant.

Over all the findings of the present study are encouraging and open a new path for poor learners their learning performance.

Educational Implications.

On the basis of emerged findings the following educational implications are suggested.

(i) At the time of teaching teacher can structure the classroom climate in such a way that, it can provide opportunities to the students to think reflectively.

(ii) The students should be encouraged to maintain their own leaving journals every day and review it. It will be helpful in developing their synthesizing ability and the feedback will help to them in modifying their action.

(iii) In the teaching learning process the teacher should encourage the student to find out the cause of mental process involved at the time of learning which leads to success.

(iv) As metacognition is a potential determinant of learning performances, there should be a proper measure of metacognitive awareness in addition with the intelligence parameter. It will help the teacher to know the states of metacognitive awareness of children and plan his teaching strategy accordingly.

Suggestions for Further Researchers

No study is complete and perfect is itself. Each and every study raises further quaries regarding the issues involved in the investigations the present study was

conducted by taking into account the U.P. and Rajasthan State elementary school children according to their mathematics score obtained in their half yearly examination. This study also raises some issues. The following research studies may be undertaken for deeper understanding of the problem and reaching on more acceptable finding. However some of the suggested areas for further research work are as follows:

1. The present study can be replicated by taking different subjects viz biology, chemistry, social science etc. at different levels e.g. primary, secondary, senior secondary and college level.

2. A cross culture study can be planned and executed by taking urban and rural, public; private and government schools children respectively.

3. An experimental study can be conducted by making a control and experimental group of students on the basis of the achievement in any subject and their metacognition strategy.

4. Process product studies in the field of researches on student behaviour or learning effectiveness of the student is a need of present day. Many researches can, therefore be planned to study effects of variety of metacognitive strategies in the student achievement in physics, chemistry and biology etc.

5. Separate study can be selected for deep analysis of student metacognitive awareness contributing to inquiry and problem solving classroom situation.

6. Attempt may be made to develop certain specific teaching skills, concerned with the metacognition values of the learner and study the effect of classroom teaching skills on students enhancement on higher cognitive mental process.

7. A similar type of study may be undertaken on large samples with more rigid controls and better structural design including more states of the country.

8. Besides this study based on student achievement score in mathematics in half yearly examination next study may be conducted in other situation like the secured score in mathematics/total score in yearly examination record.

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