EFFECT OF CONSTRUCTIVIST APPROACH ON ACHIEVEMENT IN MATHEMATICS OF ELEMENTARY SCHOOL STUDENTS IN RELATION TO THEIR PROBLEM SOLVING ABILITY

A SUMMARY OF THE THESIS

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SUMMARY

The world of today which depends more and more heavily on science and technology demands more and more mathematical knowledge. Mathematics plays a big role in developing human thoughts, bringing strategic, systematic reasoning processes used in problem analysis and problem solving. Study of mathematics has various objectives at the various stages of school education which can be described as it aims at to enable the students to understand mathematical principles, concepts, processes, to develop the technique of problem solving among them, so that they may able to express their thoughts clearly and accurately. It also aims to develop critical attitude among the students to solve the problems of mathematics. But these objectives of teaching mathematics are not generally achieved, due to various reasons like traditional approach of teaching mathematics has been used by teachers in the class rooms. Also the major cause for the failure in mathematics is the way in which children learn mathematics rather than the difficulty of mathematics itself as a discipline. Mathematics being abstract is not a mere collection of facts; rather it is a way of thinking. Therefore children will not learn mathematics unless they learn the ways that enable them to think mathematically. However, the ways in which children learn mathematics depend on the ways in which they are taught by their teacher. Knowledge structure has to be constructed by every individual learner in his own mind. The teacher can only organize learning situations in the form of constructivist activities (structured practical activities) that lead to the knowledge construction. These activities help in building the foundation for higher knowledge structure among the learner. Constructivist teaching is a method of teaching based on the constructivism learning theory. According to the theory, students learn by building on their previous knowledge and experiences and by actively engaging in the learning process, instead of receiving knowledge passively through lectures and memorization. Constructivist teachers focus more on learning through activity, rather than, learning from only textbooks. The teacher will make an effort to understand their students’ preexisting conceptions and use active techniques, such as real-world problem solving and experiments, to address the students’ conceptions and build on them. In a constructivist classroom, teachers encourage students to question themselves, their strategies and assess how the various activities are enriching their understanding. Students become expert learners in actively constructing knowledge instead of reproducing a series of facts. In a constructivism classroom, students
often work in groups. This helps students learn social skills, support each other’s learning process and value each other’s opinion and input. Thus, teaching in constructivist active learning environment is more effective than traditional instruction in enhancing students’ interest and conceptual clarity in mathematics. Constructivist approach not only creates the interest among the students in mathematics, but also encourages students to learn on their own. It guides activities of the students, trains their emotions and stimulates their creative thinking. It helps in enhancing students’ Achievement in Mathematics as they construct their own knowledge by experiencing the situations. It has been found that in order to help students to learn mathematics meaningfully, teachers should ensure that learning is constructive. It also intends to study whether students who are having high problem solving ability differ in their achievement or not when taught with constructivist approach and if such an effect is found then special efforts can be made to provide opportunities to engage them into activities that might enhance their motivation to learn mathematics by their own. Thus Constructivist approach develop curiosity and initiative among the students, which is the dire need of the hour today.