Abstract

Constructivism has received considerable attention in educational enterprise. It maintains that individuals create or construct their own new knowledge through the interaction of what they already know and believe. So, with the following research questions the investigator started this study: (i) Does constructivist approach produce better results than conventional approach, in students' achievements in terms of immediate learning, retention, and net gain? (ii) Does constructivism encourage the habit of self-learning and self-correcting? (iii) Can constructivism in mathematics be applied in Nepalese school situation? (iv) What could be the problems that might arise while applying constructivism?

Constructivism starts with refuting the prevailing learning theories in three disciplines Psychology, Philosophy and Anthropology. According to Psychological perspective (Empiricist and Rationalist), sense and intellect are the prime sources of knowledge which has been replaced by the physical and mental Action on environment advocated by Piaget in constructivism. According to him "Action" is the prime source of knowledge. The philosophical viewpoint concerning with the fact that, truth is absolute in Descartian sense which is replaced by, working hypothesis visualised as Viable knowledge that works advocated by Dewey. Viability is relative, subjective and personal. Concerning to anthropological viewpoint, learning-by-doing, theory of Thorndike is replaced by learning through Scaffolding of Lave and Vygotsky.

The present research was conducted with the above three key-words. The aim was to advocate and adopt constructivism in mathematics teaching in Nepal. Teaching-episodes composed of 3 steps: Introducing Task, Exploration within Group and Summary through Reflection in four content areas of grade V Mathematics Curriculum were prepared. In addition to this, sampled teachers were trained and mentors were orientated for the field work. Quantitative (frequency count, tabulation and graph & charts) as well as qualitative tools (observation, interview, and written test examination followed by semi-interviews) were used to collect data. This study was carried out for five months in usual classroom situation with a design of pretest-posttest; nonequivalent control groups. Analysis of covariance was applied to analyse the quantitative data and bar graphs were prepared to represent the data visually. Mixed strategies were used to analyse qualitative data.

The results are drawn on the basis of ANCOVA, bar, arrow diagram, and scripts of test papers. A minimum of sixteen excerpts were recorded while interviewing on the test performances. Each excerpt was analysed on the basis of constructivism practices with educational and methodological implication.

Working on the sample size of 180 students from four schools involving two control & two experimental groups, the investigator found the possibility of constructivism in Nepalese schools with significant difference in achievement than conventional method of teaching. The investigator did observe differences in construction and correction made on their own by the students in the experimental group than control group. For generalization and wider application, a similar study with more schools from different zones, considering more variables is recommended.