

National attention on education of scientists and engineers is focused due to increasing importance of technology in modern economic system and increased globalization of scientific and technological ideas, development, and production. Due to this research into thinking and learning has produced dramatic new understandings and produced new technologies to build effective teaching-learning environments for technical education. Improvement of instructional endeavors is achieved by the synergy of bringing together basic research on cognition with education research focused directly on the disciplines of science and engineering. As the sources of knowledge have increased with the technology and internet, the individual construction of knowledge has become important in learning. Due to many available sources of information, knowledge has become digitalized. Knowledge of students is created within. Student learns the subject internally. So constructivist approach wherein knowledge is created internally and linked with prior knowledge becomes important. It enhances the learning by logical and conceptual growth. And thus constructivist approach can be suitable with the technological advances, wherein the students' prior knowledge is linked with new gained knowledge and the students share their knowledge by discussions, negotiation and meaning making process of their learnt concepts.

Technological advances are accelerated at an unprecedented pace. It should lead to the development of skills by training in response to technological change. Labor markets are affected by globalization. Information and communications technologies have led a dramatic effect on productivity and on the demand of skilled workers and with those having broader workplace competencies can assure higher wages.

Teaching-learning processes in technical education should be given utmost importance. Students should be given experiential learning so that they can understand and reflect on their knowledge. Researchers in the past decade suggest that learning is enhanced when the frequency with which student actively responds during teaching-learning process is increased. Educators must invite students to experience the world's richness, encourage them to ask questions, and challenge them to explore the world's complexities, not solely focus on academic achievement scores. To effectively improve the way our educational system works, we must retrain the classroom teacher as a constructivist, since the teachers, who have trained in the traditional teaching approach, wherein the teacher dominates the classroom with the over use of the textbook (Kim, 2002).

To overcome difficulties faced in teaching-learning process, constructivist approach to teaching-learning of physics may prove effective, as Constructivist approach allows the teacher to teach facts and theories more effectively in conjunction with hands on experiences in which students apply those concepts. Review of studies shows teaching-learning through constructivist approach increased students ability to retain greater amounts of academic information over time. This maintenance effect suggests that teaching-learning through constructivist approach might help students to be more successful in their careers. The review of studies conducted in different subjects such as algebra, mathematics, social studies, computers and non-art majors at different levels as primary school level, college level, in pre service teacher education level using

statistical techniques for data analysis show effectiveness of using constructivist approach. They proved to be effective in terms of students achievement scores and memory retention. Thus, it can be concluded from the above studies that constructivist approach is adopted at different levels and in different subjects and is found to be effective as a teaching- learning approach. Diane, J. (2005), Avila, L. (2006), Esmail, Y. (2006), Siemears, C. (2007), Cook (2007) and Bijas, J. (2012) and have found that constructivist teaching is effective in teaching English, Science, General Studies, learning, thinking personal understanding. The studies of Akanwa, Alphonsus and Ovute (2014) have shown effectiveness of constructivist approach. Research findings have also revealed that constructivist approach, Cooperative learning, activity based method and experiential learning developed science process skills. Thomas, M. (2013). Many other studies have been done on constructivist paradigm of learning and in Physics. The constructivist approach gives theoretical underpinnings for best-practice instructional methods designed for helping students to develop the skills and it also provides guidance for further research in the area.

First Year Diploma students were selected as a sample for present study as all the students enter in Diploma Polytechnic studies after qualifying Standard 10th Board examination from different Boards namely CBSE or GSEB. The students were from different schools having different backgrounds, Vernacular medium of instructions, different perception for subjects and also different socio economic status. So it provided a need for adopting an approach wherein different multimedia methods such as power point presentation, hand outs, activity sheets provide opportunities to students for sharing their ideas with their peers, in the process of teaching learning of utmost importance. Students' working in groups helps them to explore their knowledge and connect prior knowledge to new learning to concretize the core concepts of engineering.

Thus, constructivist approach is better suited for varied learners gathered in one class. In further studies of engineering to senior classes the students were acquainted with each other while in first year they were new to each other, so all have different understanding of the subject, wherein there is a need to understand the content commonly same as from this level they will be developing their understanding which will be firm for further engineering studies.

The study follows 5 E as constructivist approach as it is a basic design which takes care of students prior knowledge of the content linked with socially constructed knowledge in a group. The structure of process of learning incorporates personal involvement of students and also working in groups and providing time to reflect on their knowledge and learn new knowledge of the content socially.

Different studies have been done on constructivist paradigm of teaching learning of science. However, as far as the researcher has reviewed the studies, no research has been reported at the teaching learning of physics at Diploma Engineering Level. Hence the researcher chose to pitch the study at Diploma engineering level and assess the usefulness of the constructivist approach in teaching physics at the level. Thus constructivist approach was implemented in the process of teaching-learning of physics at a technical college.