

# Learning by Doing through Project Based Active Learning Technique

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**Abstract:** NASSCOM report has suggested that the Indian higher education system must give skill building and practical training along with academics to give them an edge. Cooperative learning, creativity, communication, team work, self-learning, decision making and use of modern tools are the skills of 21<sup>st</sup> century. These soft skill requirements expected from engineering students is accomplished by using active learning techniques. Teaching with active learning strategies improves students' learning level. Project Based Learning (PBL) is an active learning that offers opportunities for students to make interdisciplinary connections, address academic criteria, discover personal talents and interests develop social skills, and use current technology. Projects help learners to connect personal interests with course content as they explore it in greater depth. PBL has been implemented in Electronics Measurement and Instrumentation course at second year B Tech and learning analysis was carried out to find its impact on learning outcomes. It is observed that soft skills have been developed in learners' along with academics.

**Keywords:** Project based learning, Learning pyramid, Life-long learning, Co-operative learning

## 1. Introduction

Student attention, involvement and learning are achieved by adapting active learning methods. The overall development of student includes the development of personal capabilities and effective thinking skills. The active learning methods are student centric. The teacher acts as facilitator to help learners to gain knowledge and skills for presenting, applying and rediscovering the knowledge. From figure 1 of learning pyramid, it is evident that student can retain 75% when they use the learning or practice it by implementing [1-6].

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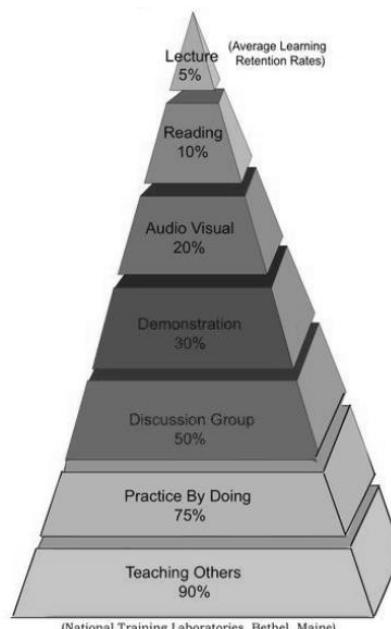


Fig 1: Learning Pyramid on basis of average retention rating in percentage of students

Project activities serve students of every academic status by accommodating different intelligences, learning styles. Also, providing more variety, choices, and options can increase student motivation. Cognitive psychological researchers indicate that these factors increase learning. The successful use of projects is facilitated by a learner-centered approach in which teachers serve as guides and facilitators. This approach encourages students to develop habits of mind that can help them become life-long learners in which learners build on their prior knowledge, experiences, and interests. Learners use primary sources of data whenever possible. Problem solving, higher order thinking and deep understanding of concepts and principles are emphasized. Learners think about their own