Chapter 15
Integrating Project-Based and Skills-Based Learning for Enhanced Student Engagement and Success: Transforming Higher Education

V. Vaithianathan
https://orcid.org/0000-0002-5482-4019
Department of Electronics and Communication Engineering, Sri Sivasubramaniya Nadar College of Engineering, Kalavakkam, India

N. Subbulakshmi
Department of Computer Science and Engineering, Kalasalingam Academy of Research and Education, Krishnankoil, India

Sampath Boopathi
https://orcid.org/0000-0002-2065-6539
Department of Mechanical Engineering, Muthayammal Engineering College, Namakkal, India

M. Mohanraj
Department of Computer Science and Business Systems, Sri Eshwar College of Engineering, Coimbatore, India

ABSTRACT

Higher education is embracing immersive, hands-on learning methodologies, including project-based and skills-based learning, which provide advantages for both teachers and students. It explores the integration of project-based and skills-based

DOI: 10.4018/979-8-3693-3641-0.ch015

learning in higher education, emphasizing the significance of enhancing student involvement, cultivating critical thinking, and preparing graduates for the contemporary workforce. Project-based and skills-based learning initiatives have been applied in different academic subjects, tailored to specific needs. The importance of technology in project-based and skills-based learning is covered to focus on how it affects collaborative learning, project management, and skill development. The combination of project-based and skills-based learning in higher education is explored to provide suggestions for administrators and teachers.

INTRODUCTION

One of the most important tactics for raising student achievement is the blending of project-based and skills-based learning in the classroom. This method develops students' practical skills and critical thinking, preparing them for problems in the real world. These methods work well together to produce an all-encompassing, interesting, and productive learning environment. A dynamic teaching approach that motivates students to actively interact with issues and difficulties from the real world is project-based learning (PBL). Through active problem-solving and project execution, it replaces the previous emphasis on passive knowledge absorption and promotes a better comprehension of the subject matter through real-world application(Das et al., 2024).

PBL is a useful strategy that gets students working on projects that are relevant to their interests and lives. This method increases learning motivation and investment while fostering the growth of critical thinking, creativity, teamwork, and communication—all of which are crucial abilities. This experience has direct relevance to future work and academic pursuits. A customized strategy that emphasizes the development and mastery of certain abilities, skills-based learning (SBL) sometimes includes customized learning plans and evaluations. This approach makes sure that students are proficient in academic, soft, and technical abilities and that their competences are developed in accordance with their requirements and development(Sharma et al., 2024).

The focus of skills-based learning is on acquiring particular talents for certain disciplines, which helps to bridge the gap between academic knowledge and practical application. Software developers, for instance, may learn how to code, debug, and solve problems; healthcare students, on the other hand, would concentrate on patient care methods, medical jargon, and moral judgment(Sharma et al., 2024).

By integrating the best features of both approaches, project-based and skills-based learning improve student learning and guarantee that students are working on worthwhile projects and gaining the skills they need to finish them. Students working on

Making Success: Researching a School District's Integration of the Maker Movement Into Its Middle and High School

Keith W. Trahan, Renata de Almeida Ramos, Jeffrey Zollars, Wei Tang, Stephanie Maietta Romeroand Cynthia A. Tananis (2022). *Research Anthology on Makerspaces and 3D Printing in Education (pp. 338-364).*

www.irma-international.org/chapter/making-success/306724