

# Coordination of Student Teams focused on Project Management Processes

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## Abstract

Engineering learning processes are expected to develop technical and transversal competencies on students that are demanded by the engineering professional bodies. The need for the development of competencies raised an incremental interest in applying innovative approaches in Engineering education. One of the methodologies used in this context is Project-Based Learning (PBL). At the University of Brasília, a course degree in Production Engineering was created having as a main reference the Project-Based Learning (PBL) approach. The use of PBL implies a change of behavior of teachers who play a main role of facilitators of competencies development, and of the students, who learn in a collaborative way, working with others in teams. Students' working in team and developing a project during a semester will require effective coordination models. The objective of this paper is to propose a model of coordination among students' teams based on project management knowledge. Furthermore, a qualitative approach is applied to evaluate the application of this model during one semester. The results show that a coordination model for student teams developing projects is important to support their learning process, which is not solely dependent on students, as teachers/tutors have an important role before, during and at the end of the project. The tutor is especially important, as he/she is responsible for supporting the teams in several project management dimensions. This is an essential support for students to know how to manage the team, communicate, define goals, carry out the activities on time, plan the milestones and understand the impact of their decisions. These competencies are also part of student learning and are an important part of engineering education.

**Key-Words:** design centric education; project based learning; project management in education; coordination of student teams

## 1 Introduction

Engineering is a profession or field of knowledge that uses art and critical thinking to design and develop solutions for a large number of real demands [1]. Engineers must be able to handle the challenges imposed by the design problems, which is widely considered as the central or distinguishing activity of engineering [2]. The training of engineers has evolved in recent years towards models that approximate the engineering learning to the engineering practices, particularly those with more interdisciplinarity and teamwork. These models are based on design, project and/or problem solving. Engineering education, therefore, must help engineering students develop the necessary skills to confidently and successfully handle design problems and design unique effective solutions to meet social needs [3, 4]. In order to accomplish this, students must be able to develop design projects in an effective way and the new teaching and learning approaches, like design centric, problem and project based learning, are intended to support students' development of both technical competences and transversal competences useful for engineering practice.