# Application of Peer Project-based Learning in CAD/CAM Learning to Increase Student Efficacy and Creativity

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ABSTRACT

The challenges of the world of work with various dynamics and diverse job opportunities require students to have self-efficacy and creativity. Self-efficacy emphasizes courage in solving work challenges and creativity relates to the carrying capacity of student innovation. This study aims to develop a Peer-Project-based Learning (Peer PbL) model through model feasibility testing and model effectiveness testing. The research method used a research and development approach with model testing using experimental methods with a one shoot case study design. A total of 40 students were involved in this study with the subject matter being CNC turning simulation. The results showed that the steps in the Peer-PbL model include team building, providing challenges, preparing project plans, validating project suitability, making projects, monitoring team performance, project presentations, and peer assessment. Feasibility assessments from machining learning experts, learning technology experts, evaluation experts, CNC professionals, and CAD/CAM professionals indicated fairly strong rater and correlation results. The results of testing the effectiveness of the Peer-PbL model in the implementation of actual classroom conditions were able to increase self-efficacy and creativity before and after the Peer-PbL model was implemented. This research is a strategy in updating PbL as a learning model that is suitable for CNC simulation and programming courses.

Kata Kunci: *Peer learning, Project-based learning, peer PBL, CNC learning*