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Applying the Extreme-Based Teaching Model in Post-Secondary Online Classroom Setting: A Field Experiment

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Abstract : The first programming course within post-secondary education has long been recognized as a challenging endeavor for both educators and students alike. Historically, these courses have exhibited high failure rates and a notable number of dropouts. Instructors often lament students' lack of effort in their coursework, and students often express frustration that the teaching methods employed are not effective. Drawing inspiration from the successful principles of Extreme Programming, this study introduces an approach—the Extremes-based teaching model — aimed at enhancing the teaching of introductory programming courses. To empirically determine the effectiveness of the model, a comparison was made between a section taught using the extreme-based model and another utilizing traditional teaching methods. Notably, the extreme-based teaching class required students to work collaboratively on projects while also demanding continuous assessment and performance enhancement within groups. This paper details the application of the extreme-based model within the post-secondary online classroom context and presents the compelling results that emphasize its effectiveness in advancing the teaching and learning experiences. The extreme-based model led to a significant increase of 13.46 points in the weighted total average and a commendable 10% reduction in the failure rate.

Keywords : extreme-based teaching model, innovative pedagogical methods, project-based learning, team-based learning
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