

MRINAL MUSIB

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INTEGRATING DESIGN THINKING, A NOVEL 3D PRINTING TECHNOLOGY AND 'VISUAL LEARNING' TO PROMOTE LONG-TERM TEACHING AND LEARNING EFFECTIVENESS

Abstract:

Team-based, hands-on, active pedagogical techniques promotes long-term, real-life learning. In this project I involved engineering students to design and develop functional medical device prototypes using novel manufacturing techniques and use such prototypes to promote authentic learning both in- and outside- of classroom. Individual team members were accountable for accomplishing discrete steps in the whole medical-device developmental process and eventually a comprehensive 3D device was fabricated. The effectiveness of the strategy was evaluated using individual and focused group discussions and implications on the student learning process with or without the usage of such prototypes on several cohorts. Students learnt more as compared to traditional teaching and learning techniques.

Keywords:

Active learning, team-based learning, authentic learning, creative thinking, novel pedagogy

JEL Classification: C92, I23, O31