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Investigating the impact of automated feedback in e-learning environments

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ABSTRACT
Personalized support and formative feedback are instrumental in the instruction and development of students. As already large classroom sizes increase, demands for limited resources also increase, thereby reducing the ability for an educator to provide the personalized feedback that students require. In the case of online e-learning environments, students often lack the support they need as static material and limited or superficial assessment utilities are commonplace. The Immediate Feedback System (IFS) is a robust, automated feedback system which mitigates this gap in online education by providing an interactive environment for students to submit written work and receive continuous feedback.

The IFS seeks to provide an excellent user experience design through the application of cross-disciplinary concepts of social-cognitive theory, self-regulated learning, educational data mining, and goal-based learning — wrapped in an aesthetically pleasing web interface. In the back-end of the application, educational data mining and information gathering occurs for the purpose of statistical analysis on the effectiveness of the automated feedback given to students. Ideally, as a result of this study, we will identify the pedagogical impact of automated feedback on student self-efficacy, engagement, and overall performance in writing and programming courses in an e-learning environment.