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Utilizing text analytics, data visualizations, and regression to inform teaching and feedback in large enrollment courses

Diagnostic tools are often utilized to gauge student mastery of prerequisite skills and preparedness for a given course. These tools often take the form of a multiple choice assessment, where information can be gleaned from both correct and incorrect choices. However, these tools do not allow for more nuanced information about student thought processes and activated mathematical tools in solutions. At the same time, in large enrollment courses, there is a high degree of heterogeneity, where students have a variety of backgrounds, skill sets, and motivations, and providing individualized action-oriented feedback is challenging. In this project, we propose a framework for a diagnostic tool designed to provide nuanced information about a student cohort's preparedness in a scalable way that can be leveraged to inform both teaching and student feedback.