

**Grading Tool for Web-based Reports
(Technical Report)**

**Analysis on Motivations for Cheating
(STS Research Paper)**

An Undergraduate Thesis Portfolio

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Bachelor of Science, School of Engineering

By

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Sociotechnical Synthesis

My technical work and STS project are connected by their mutual goal of bettering educational methods. My technical work involves the development of a tool for grading web-based reports. My STS research offers an analysis on the motivations of cheating among students with an emphasis on trends during the shift to online learning amidst COVID-19. While the technologies discussed in my technical and STS research differ (one involves a grading tool and the other involves cheating services), both address issues in educational assessment.

My technical work produced a tool for grading and annotation of web pages online. Although word processors like Microsoft Word have features that allow for graders to provide commented feedback, there is no support for grading features such as distribution of point values or display of a rubric. The alternative of providing the grade and feedback on a separate document compromises communication, obscuring exactly what part of the report a comment may be referring to. Our capstone team developed a web application that allows for a user to specify a rubric and a website and then to make annotations on the site associated with point values assigned to rubric categories. The current plan is for the tool to be tested in the course *HCI in Software Development* in the near future.

My STS research analyzed motivating factors for cheating among students. A number of different research studies regarding student cheating were analyzed, showing potential situational, psychological, and societal factors involved in motivating the act. Ajzen's theory of planned behavior was then applied to students learning online in light of the COVID-19 pandemic. My research examined how changes in attitudes, perceived behavioral control, and subjective norms may have led students to cheat during this time and the role played by online cheating services. The goal of this work was not to suggest a specific solution to cheating

behavior among students but to reveal the complex web of factors associated with such behavior. With this information, more holistic solutions to deterring student cheating that better students' education may be formed.

Working on both my projects simultaneously allowed me to reach more profound insights than I could have reached working on either one alone. While the goal of my technical work was to create a tool to improve communication of feedback to students and thus improve their learning, my STS research raised awareness of ways in which the educational environment may not be conducive to learning. These two works together suggest a common theme: education is a collaborative enterprise. Just as students must be able to understand feedback from instructors in order to learn, an environment of academic integrity requires understanding between students and instructors of shared values.

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