Increasing the Adoption of Automated Writing Support through Curricular Integration

Abstract

In a 2018-2019 Miller-funded tryout of Grammarly in writing-focused and writing-intensive courses at ISU, 26 participating faculty reported successful implementation of the writing-support tool in their courses while large majorities of their students expressed highly favorable views of Grammarly and the intention to continue using it. Based partly on these positive outcomes, the CASTLE committee funded a campus-wide trial of Grammarly for all ISU students and faculty in 2020. However, adoption in this more recent, non-course-based initiative has been lower than expected, with current users accounting for about 30% of available licenses, prompting the CIO's office to consider a smaller licensing arrangement or even non-renewal of the service. Likely barriers to adoption include misapprehensions about Grammarly and the effort required to incorporate it into individual workflows. This project seeks to achieve the original aim of broad implementation of Grammarly at ISU by establishing an empirically grounded, collaboratively developed course-integration model based in ISUComm's Advanced Communication courses, which can also be implemented in other high-enrollment courses and lead to wider adoption of the tool.

Project Significance

This project supports both the broader goals of the university as well as the more specific goals of ISUComm's Advanced Communication (AdvComm) program. Clear and comprehensible writing helps fulfill ISU's mission to create and share knowledge, to communicate contributions to scholarship and society with confidence, and to increase students' preparation for professional practice. ISUComm's overarching goal is to strengthen students' communication and critical thinking skills through practice spanning the curriculum and their academic careers. Grammarly supports these goals by (1) empowering students to independently evaluate and improve their own writing and (2) freeing instructors from some of the burden of lower-level feedback so they can more easily incorporate writing into instruction and assessment. Course-based implementation of Grammarly also addresses ISU's vision of putting technology to work, providing cutting-edge infrastructure for research and learning, and facilitating high-quality teaching and academic support.

The role of course integration is highlighted by human-factors research showing that adoption of automation is more likely to be sustainable and calibrated (i.e., characterized by neither overreliance nor underreliance) when users are allowed to develop a working understanding of the tool over a substantive period of use (Lee & See, 2004), a finding which our own work involving Grammarly corroborates (Ranalli, 2021). Anecdotal evidence from the original Miller-Grammarly project suggested that the requirement to
use Grammarly as part of course assessment afforded students this working understanding.

By developing a curricular-integration model in collaboration with volunteer instructors of ENGL 302, 309, 312, and 314, this project seeks to extend these benefits to the approximately 4,500 students taking AdvComm courses every year. The model could later be implemented in the ISUComm Foundation Courses (ENGL 150 and 250) as well, thus reaching nearly every undergraduate at ISU.

Finally, the broader academic community also stands to benefit by dissemination of the knowledge gained in this project; in particular, a better understanding of how curricular integration can support technology-focused initiatives in which the buy-in of students and instructors will be determinative.

Enhancement of Student Learning Outcomes

While the syllabi for ENGL 302, 309, 312, and 314 all mention the role of appropriate grammar and spelling in achieving one's rhetorical purposes, none list learning outcomes related to linguistic form or sentence-level correctness. This project provides a way for the AdvComm program to better support the requirements for sentence-level correctness by directing students towards technology that can help them address this need. At the same time, the scaffolded experience of that technology could lead to calibrated reliance and thus sustainable incorporation into individual students' writing habits and workflows. These positive outcomes can be carried forward from the AdvComm courses into students' subsequent undergraduate work and beyond into their post-graduate professional and/or academic experiences.

We also see a learning outcome for AdvComm instructors, which is an enhanced understanding of the positive role that automated writing-support technology can play in writing pedagogy and student writing performance. This will be important given research showing that instructors' attitudes toward automated writing-support tools strongly influence students' views and adoption patterns (Li, Link, & Hegelheimer, 2015).

Assessment Plan

The effects of course integration on student adoption of Grammarly will be determined by comparing anonymized Grammarly usage data for students enrolled in participating and non-participating sections of AdvComm courses during the project period. (PI Ranalli has overseen similar data-collection efforts in collaboration with Grammarly conducted on behalf of CASTLE and the CIO's office).

We will also assess the effects of course integration on students' and instructors' attitudes and beliefs about automated writing support through pre- and post-intervention surveys comparing participating and non-participating sections of AdvComm courses. These surveys will be based on instruments used in previous related studies and piloted beforehand.

Finally, we will measure the effects of student Grammarly usage on AdvComm instructors' ratings of delivery (a holistic determination of the frequency and gravity of
sentence-level errors) and feedback burden (the amount of effort that would be required to provide feedback to a given student submission). This essay evaluation task eliciting these two types of rating will involve a corpus of de-identified student submissions for one of the major assignments in ENGL 302 and ENGL 314, some of which were checked in Grammarly before submission and some of which were not. A panel of AdvComm instructors will review a certain number of essays from both groups without knowing which group they come from and assign a rating to each. (Rating packages will be organized to avoid any instructor grading essays they have previously graded in their classes.) The purpose here will be to empirically test the anecdotal claims of instructors in the original Miller-Grammarly project.

**Intended Scholarship and Dissemination**

We anticipate this project will lead to (1) one or more conference paper presentations at professional meetings of writing program administrators, applied linguists, or both; and (2) the publication of one or more papers in peer-reviewed journals in the fields of college composition, applied linguistics, or both.

These studies will address the effects of curricular integration of automated writing support on adoption by students, and the effects of automated writing support on writing instructors' perceptions of the feedback burden, both of which are currently gaps in the research literature.

**Project Plan**

**Spring/Summer 2022:**
- Obtain IRB approval for all research activities
- Develop and pilot the pre-post survey instrument and focus-group materials
- Outline the materials-development and classroom-support plans for participating sections of ENGL 302, 309, 312, and 314
- Familiarize AdvComm instructors with the project via email and an appearance at an end-of-term online instructor meeting
- Recruit a graduate student who can fill the GA role in Fall 2022

**Fall 2022:**
- Administer the pre-intervention survey
- Run the intervention in participating classes
- Develop materials and classroom activities in collaboration with participating AdvComm faculty, pilot these materials in class and online, and refine materials based on piloting and student feedback
- Conduct focus group discussions with non-participating AdvComm instructors
- Identify and recruit graduate student who can fill the GA role in Spring 2023
- Administer the post-intervention survey
- Recruit AdvComm instructors and GA for Spring 2023
In December, obtain and analyze anonymized Grammarly usage data for AdvComm students from Fall 2022

Spring 2023:

• Analyze survey and focus group data collected in Fall 2022
• Continue piloting and refining of materials and organize them into a Canvas module
• Submit conference proposals and plan manuscripts
• Determine overall plan for Grammarly integration in AdvComm courses
• In May, obtain and analyze anonymized Grammarly usage data for Spring 2023
• Prepare Miller Faculty Fellowship project report to be submitted on June 30

References

