

MICHELLE RICHARDS-BABB, C. Eugene Bennett Department of Chemistry, West Virginia University, Morgantown, WV 26506. Embedded student formative reporting to promote student metacognition and instructor pedagogical adjustments

Timely, formative feedback is important for instructors and students. In this project, “embedded students” provided instructors with formative feedback through anonymized reports. Students enrolled in preparatory chemistry course sections in fall 2022 self-selected to submit reports documenting their ongoing experiences in learning chemistry content. Embedded students journaled about (i) hours devoted to the course; (ii) topic-specific content mastery, comfort, and confusion; and (iii) instructor pedagogy. An average of 108 reports per week were anonymized and shared with instructors. Instructor effort was limited to agreeing to receive the weekly reports, look them over, and potentially use them to inform upcoming teaching. Embedded students benefited by thinking about their learning in the class (metacognition) and focusing their learning for the upcoming week. Overall, 300 distinct students submitted 1,513 weekly reports, with overall means of 2.81 hours per week of self-reported time devoted to attending lecture, 4.75 hours per week of self-reported time engaged in additional study, and 7.56 hours per week of self-reported total time devoted to the course. Instructors reported reading over 87% of the reports and using feedback to make an average of 4.6 instructional adjustments ranging from working additional practice problems on difficult concepts, providing answer keys to extra problems, implementing problem-solving/review days, and reviewing difficult material or content from earlier in the course. Instructors indicated that the weekly reports contributed to “instructor beneficence”. Students “felt heard” especially when instructors explicitly and constructively addressed comments from the weekly reports. This work is partially supported by the NSF-funded First2 Network.