WIP: How to Interview the Crowd: Enlisting Informal Student Feedback in a Formative Assessment Process

Introduction

This Work in Progress addresses the issue that many first-year engineering students want to be heard and to have their educational needs met but may be reluctant to share their thoughts directly with faculty, either during class sessions or between them. Faculty want to facilitate learning environments that accommodate their students' needs, and to let students know that they are proactively doing so on a regular basis. Soliciting student feedback with exit surveys throughout a semester or term allows instructors to provide formative feedback, through survey questions that prompt students to share their perceptions about what helped their learning process during and between class sessions, what could be improved, and what they actually learned.

An argument exists that in-class surveys provide better formative student feedback about effective teaching and learning than a survey about one or two previous classes, because participants are in the middle of the learning activity that the instructor is attempting to assess rather than reflecting on it after the class before they respond [1] [2].

On the other hand, post-class exit surveys provide opportunities for reflection, which is beneficial for student well-being; offers relief from obsessions about the course or instructor; results in improved cognition and metacognition; and leads to increased course motivation and engagement [2], [3].

Our study will seek to understand formative student feedback collected at various points by comparing the results of in-class exit surveys (completed during class) and post-class exit surveys (filled out at the end of class). Our work is guided by the following research question:

- How do instructors describe the student feedback that emerged from in-class and post-class exit surveys administered during the course?

There are four elements of formative assessment [4]:

- Identifying the gap in student learning;
- Feedback from instructor to student;
- Learning progression using sub-goals to reach one or more learning goals; and
- Student involvement in metacognitive learning

Our surveys collect formative feedback identified as student involvement in metacognitive learning [4].

Exit Surveys in our First Year General Engineering Courses

We develop and administer periodic exit surveys for student feedback using Google Forms. Participating instructors have autonomy regarding the frequency of these surveys, most often either semi-weekly or weekly. QR and URL links are provided for students to access each survey, and their email addresses are recorded. Faculty can then compare their perceptions of student progress with what students are telling them. The faculty report the survey results to the students, and describe what they have done or will do to promote what students liked and how they have or will address their identified needs.

Survey questions contain prompts about ideation, design requirements and deliverables, user empathy, and students' satisfaction with their learning experience, among others. Several examples of in-process questions about these topics are as follows:

- What was the most intriguing design idea you had, regardless of whether it's feasible in our project?
- What questions do you have about the next project deliverable?
- What is it about your design that you think the end users will like?
- What did we do this week that helped your learning?
- What could we do to improve your learning?

Exit surveys administered near the end of the semester also included summative questions about overall satisfaction with the project and the course in order to prompt reflection about the students' overall satisfaction with the course structure, content, and delivery methods.

In addition to timely faculty response to student feedback, these data can be summarized over the course duration to reveal trends in students' extent of satisfaction with the course content and delivery methods, which will inform areas for reinforcement and improvement during the next iteration of the course.

Methods

To understand our exit survey process across multiple instructors, we collected all exit survey questions given during one semester from each participating instructor. We performed a thematic analysis [5], [6] of each question, and inductively coded them according to intent.

To understand the relationship between student feedback from the exit surveys and our decisions in course development and design, we performed an autoethnography. This began with each instructor reflecting on their memories of the exit surveys and their utility that semester. We then read and discussed each other's reflections several times, before settling on themes.

To assess the value of the exit survey feedback at different levels, we organized all exit survey questions according to the codes previously developed through thematic analysis, then rank each student response to assessment questions according to quality and utility. We also mark each response that was used or will be used. We then compare counts of each useful response across levels in the hierarchy.

Preliminary Results and Discussion

We coded the exit survey questions according to various aspects of reflection, such as prompts for self-monitoring and self-assessment of learning, along with assessment of course topics, identification of future plans for the design project, and occasional questions that were intended to entertain and engage students.

Recent examples of feedback about class activities that enhanced student learning involved technical instruction, design showcases, interactive in-class activities, and time for project teams to work together during class. Suggestions for improving the course included additional background information in course materials, examples of previous designs, and in-class discussions.

Two broad categories of responses were collected from our current exit surveys: suggestions for improving the course in real time, and suggestions for course improvement in a succeeding semester. Real-time improvements were made immediately, and students were notified during class as to how these improvements were made. Suggestions for future improvements were verbally acknowledged during class.

Succeeding work will include iterative establishing patterns and themes from faculty participants' autoethnography, and a summative assessment of the impact of the process on the student learning experience, including further exploration of the scope and timing of exit surveys to evaluate their effectiveness in promoting reflective practice by asking more specific questions informed by guidance in critical thinking [4], [7]. Another advantage of more specific questions is an expected decrease in non-specific complaints about the course without suggestions for improvement.

Additional work could be done to improve response rates while keeping the exit survey as a largely voluntary activity. Requiring this survey of all students might compromise the authenticity of their responses. More specific questions might elicit more useful feedback, especially if the questions prompt for critical thinking and/or reflection. In addition, survey response rates were reported in the literature to vary by gender, race, internationality, and public vs. private institution [8]. We are able to investigate the demographics of our survey participants to find out whether this is actually the case.

References

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