GIFTS: Metacognition reflection notecard: A 5-minute daily class activity to drive self-efficacy, classroom engagement, and community

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In the last five minutes of my first-year engineering class sessions, I hand out notecards and ask each student to write their responses to three simple but powerful questions:
Question 1: What's the most important concept you learned today that you want to remember?
Question 2: Is anything unclear to you after today's class? Are there any outstanding questions still on your mind?
Question 3: What is one song you'd like to be added to our class playlist? Include your name if you want credit for your song choice.

I review student responses at the end of every class and use the responses to Question 1 to understand which lessons resonated with students. I use the answers to Question 2 to populate a shared Running Questions & Answers document (created using Google Docs). I add the student-generated questions and my answers to this document, which the entire class has access to. This helps to clarify confusion quickly and to demonstrate to nervous students that they are not the only ones with questions. Finally, I use the answers to Question 3 to build our class's shared Spotify playlist and to provide incentive for the students to complete the reflection. Before each class starts and during our breaks, I play a randomly-selected song from the playlist.

This intervention was implemented in my Fall and Spring first-year honors engineering courses, which had about 25 students per class. The Fall course was *Introduction to Engineering & Problem Solving* and the Spring course was *Computing for Engineers (MATLAB)*. The classes met for 75 minutes twice a week and we completed metacognition reflection at the end of every class. I stood by the door to collect physical notecards from the students, so the response rate was typically 100%. This intervention was done in a small class setting, but it could be scaled for larger classes using Google Forms with AI and/or Teaching Assistants to summarize student learnings and questions.

There are significant benefits to this simple practice. Students take more control of their own learning as they become better at understanding where they need clarification on a topic and where they just need more practice. The openness to questions and shared playlist fosters a strong and inclusive classroom culture, as students have something to talk about with music at the beginning of every class. Many students shared that they have implemented personal metacognition reflections at the end of all their classes. The 5-minute notecard can be implemented in any level course without taking significant time away from instruction in order to help students' self efficacy, create engaged classrooms, and build a supportive engineering community.