

# Pain Poll: Understanding Engagement in Homework

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**Context:** In class; Introduction to Computer Science

**Keywords:** assignment reflection

**Student Activity Time:** 1-5 minutes

*After completing assignments, students reflected on how long it took them to complete the assignment.*

## Introducing the Reflection Activity

In an introduction to computer science course, first- and second-year students reflected on the time it took them to complete course assignments. The purpose of this reflection activity was for students to reflect on their own performance and the implications of that performance.

After students submitted their homework assignment, in the next class meeting, the educator engaged them in a “Pain Poll” about their assignment. In this conversation, the educator asked students to reflect on the time it took them to complete the assignment (e.g., 0-2 hours, 2-4 hours, 4-6 hours). In this reflection “Pain Poll,” students raised their hands when the educator called out the time that represented how much time they worked on their assignment. The educator drew a rough histogram to represent the times students reported it took them to complete the assignment. Then the educator had a discussion with students about the histogram—if students completed the assignment in less than 10 hours, hopefully they completed the whole assignment and if it took way more than 10 hours, he encouraged them to identify why the assignment took so long. In this discussion, he wanted students to self-identify if they need to reach out for help.

In terms of outcomes, when students take time to reflect alongside one another on their experience completing the assignment, they can see where they are relative to other students. Such information may be informative for students—for example, if it didn’t take a student long to complete an assignment compared to everyone else, the student may think they may truly understand the information or that they don’t know the information and need to spend more time on the assignments. Students who took a long time on the assignment are not only encouraged to reflect on why it took so long, but also to seek out resources (e.g., talking with educator or teaching assistants) to clarify any difficulties they encountered, so those problems are easier for them to address in the future. This discussion may encourage students to change their behavior and then seek help on their assignment.

### Recreating the Reflection Activity

	Description
1	Ask students how long it took them to complete the assignment.
2	Sketch a rough estimate graph of students' responses.
3	Discuss students' responses and guide them toward resources to help them in future assignments.

#### In the words of the Educator: Tips and Inspiration

*Discuss the histogram with students.* I believe it's very important to talk through the exercise with students, so that students on the high-end of the time scale don't feel as though they are "below average" or somehow this material isn't for them. This is done by pointing out that many very strong students sometimes end up on the high-end of the time scale because they run into a few specific issues that can still take a lot of time to solve.

*Recognize the payoff of reflection activities.* I know that whenever an educator is considering implementing a reflection activity or a new pedagogical approach, there is always consideration of tradeoffs. The educator takes into consideration what content material they could be covering in that time. However, reflection activities are worth the payoff. For example, some of the simple reflection activities are low-time intensive, but they are worth the payoff.

*What was the inspiration for the reflection activity?* I started using this reflection activity when I was a graduate teaching assistant. I remember the educator saying that he expected students to spend about 10 hours on the assignment. I remember thinking how do you gauge such information. To begin with this reflection activity was a way for me to better understand students' experience with the homework assignment. Then I realized that this information could also be valuable to students. Particularly, I didn't want students who were on longer time tail to get discouraged about their abilities related to the course.