

Teaching Philosophy

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1 Instruction Context

The remainder of my responses are framed in the hope of becoming a TA for various CS courses at Caltech, as well as being a Dean's tutor and a helpful friend. As a TA, my role would likely involve holding office hours, grading, and providing feedback and clarification. As a friend and tutor, it would involve explaining topics, possibly for the second time, in a tailored approach to someone I know on a personal level. In all cases, the students are peers at Caltech who have a wide range of high school CS knowledge.

2 Preparation

In order to be well prepared to help the student, I would first get acquainted to the assignment: for office hours this may be the project, for recitation this may be a lab. In addition, if there are resources such as an aside or the TA guide for a project, I would review that. Finally, I would gauge the student's ZPD with what lectures have covered and, if applicable, any learning objectives. This is in the hope to be as sure as possible of where the student is at, in order to provide the appropriate next step in a forward direction.

3 Materials

There is a trade-off between how explicit and concise the materials are; the materials should not be an information overload while being as clear as possible in its expectations. My preferred solution to this trade-off is sectioning off information, either with bullet points or lists for each task of a problem, to keep the method of conveying information concise without losing explicit detail. This is especially relevant on lecture slides, where I prefer to rely on a mix of diagrams and only a few key bullet points. Filling in the rest verbally and walking through the slides would solidify the key points for the student while hopefully still retaining the connections. Another trade-off is in how much the materials provide context and/or applications: in deciding how much information to provide in the materials, there is a trade-off in the necessity of contextual examples

or real-world applications to help with grasping a topic. In more abstract topics such as graph theory, I would relate the problem in terms of cities and roads but veer on the side of less examples built into the materials. Instead, I would prepare an on-hand example/application and gauge the students' understanding in person, if possible, for its necessity.

4 Student Interaction

To make one-on-one interactions (a) positive, I would focus on building trust through active listening and genuine affirmations. To me, active listening means allowing the student to do the learning rather than taking the wheel, but also listening and affirming the student's problem, learning process, and frustrations. I would also give casual, supportive affirmations the way I do on a sports team (ie. "Ooh, nice" or "Really good job") in each step of our interaction. To make student interactions (b) productive, I would focus again on allowing the student to be actively learning rather than the faulty model of "transmitting information". I would also give actionable feedback: in office hours, this means the next step in a forward direction to guide the student, for example in the form of "try doing [actionable item] to debug". Finally, to make these interactions in the ZPD, I would scaffold tasks, whether in having the student explain a topic back to me (similar to the Feynman method) or in the actionable feedback/task I give. This is in the hope of breaking down a more complex task/topic with some guidance to land in their ZPD, where afterwards the student is now independently capable. This also serves to ward away learned helplessness by making a task/topic/problem achievable.

5 Policy and Inclusivity

I would balance students receiving the grace they need against providing an inequitable environment by requiring a future learning plan before moving forward, and a limit of consecutive grace actions decided on by both the student and myself in this plan. An example of this would be deciding, together, on new deadlines on the previous missed assignments, a cap of one more extension for the next project, and scheduling a follow-up check in. This ensures equity in its confidence that these are exceptions, not the rule, and the newly built confidence in the student to follow through with the plan. I would also decide on a strict cap on the grace actions provided that is applicable to all students, regardless of circumstance, to prevent misuse of this policy. Repeatedly providing grace can harm the student if they fall so behind that any new material is far above their ZPD and they develop learned helplessness in the assignments/material they are behind on. Rushed learning and/or consistently receiving too much grace and help on consecutive assignments could push a student to this point.