Student Engagement Strategies Guide

Overview

In this guide you will find ten different strategies for capturing and maintaining student attention during classroom lessons. Student Engagement strategies can be interspersed throughout existing lesson plans, projects and activities to increase interest among your students, regardless of the topic.

Strategies, Definitions, and Teaching Tips

To ***address misconceptions about the field of CS*** is to implement the use of examples that illustrate the diversity of individuals, the breadth of interdisciplinary topics, and the potential for all students to learn CS.

Teaching Tips:
- Begin by having a discussion about what specific prejudices your students have. This way, you will be able to address specific misconceptions rather than guessing at what they *may* be thinking.
- Collaborating with a teacher from another discipline in the teaching of a specific activity will help students understand how a concept can be applicable in a variety of situations

Effective Encouragement uses nurturing and positive language that praises effort and diligence during challenging or novel tasks that lead to greater persistence by students.

Teaching Tips:
- When praising students, be as specific as possible rather than generic. For example, say *"I'm really impressed with your ability to keep trying different strategies to solve that problem"* rather than *"Great job!"*
- In group activities and discussions, encourage your students to use positive language to provide support for each other

Group Students by Level of Experience with CS. Placing students in collaborative learning groups based on level of experience, either formally or informally, with computer science (CS) concepts, principles, and practices.

Teaching Tips:
- Have students fill out an initial survey in order to accurately group them into peer groups by knowledge level

Incorporate Student Choice. This creates the option for students to select a particular task or question among several possible options within an activity.

Teaching Tips:
- Be diverse in your options to appeal to a wide variety of student interests
- Provide a range of tasks that extend past the scope of what is normally expected in order to provide students an opportunity to try stretch goals while being rewarded for their effort

Interdisciplinary Connections to CS is the integration of knowledge and skills from other disciplines (e.g. biology, finance) with computer science.

Teaching Tips:
- Create a unit with a teacher from another field around a topic. Build lesson plans together that leverage learnings from each of your individual class periods.
- Assign homework projects that present interdisciplinary problems.

Meaningful and Relevant Content is content that is either meaningful and/or relevant to the individual student or the discipline.

Teaching Tips:

- Choose examples that are picked from the headlines in order to infuse current events into your lesson plan
- Work with a local business that relates to your discipline to create project-based learning experiences with real world applications

Avoid Stereotypes and Mitigate Stereotype Threat by including the presence of language or examples that are more inclusive of a diverse student population.

Teaching Tips:

- Your examples don't need to be limited to the types of students in your classroom; be creative about what diversity could mean by using many different characters in your examples.
- Bear in mind that even seemingly positive comments that generalize a particular group can trigger stereotype threat (e.g., telling the class that "All of the women did great on the exam.")

Student-Focused Assessment implements assessment items that provide students with feedback that can be used in the self-examination of their learning.

Teaching Tips:

- Have each student create a substantive example test question and what the correct answer(s) should be. This will help your students understand what they should be getting from the lesson, as well as help you see what students are understanding.
- Provide some opportunities for student assessment that is not tied to a grade to allow students the ability to understand their performance.

Student-Student Interaction are interactions between students that help them build peer-support networks and that foster a student-centered learning community.

Teaching Tips:

- Don't create groups where students who are underrepresented in computing are isolated one to a group.
- Pose questions that are relevant and interesting to your students and allow them to discuss their reactions in pairs or small groups.

Student-Teacher Interaction are interactions between students and teachers that encourages students to feel less intimidated and more included during novel tasks.

Teaching Tips:

- Don't be afraid to work through a problem that you have not yet mastered *with* your students. This will allow them to see that you don't have all of the answers and the importance of persisting through challenges.
- Use inclusive terms to make information more accessible. (e.g. "How do 'we' work through this problem?")

More reference docs, lesson plans, and demonstrations can be found on Google's Exploring Computational Thinking website (g.co/exploringCT)