STUDENT VOICES from AP CSP

Addressing Challenges Related to Collaboration

About Our Student Partners

Over the 2016-2017 school year, **13 student research partners** enrolled in AP Computer Science Principles (CSP) at Wolcott School shared their successes and challenges in the course during every-other-week interviews with the Outlier research team.

Keep in mind that while our student partners were enrolled in an AP CSP course using the Code.org curriculum, the challenges they identified could occur in *any* high school CS course and for *any* student, not just those with diagnosed learning and attention disorders.

> **164 total student interviews**
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> **STUDENTS:**
> - were in 10th – 12th grade.
> - had varying levels of prior experience with computer science.
> - had at least one diagnosed learning or attention disorder.
>   62% ADHD/Executive Function, 54% Writing, 46% Reading, 31% Math, 15% Language.

What We Heard: Common Challenges Related to Collaboration

I got extremely frustrated with them cause they didn't know what they were doing…Basically there was a ton of work on my half… And then the fact that I wasn't doing it fast, they thought they did everything right even thought I blatantly told them that you messed up. And they were blaming me.

People started getting frustrated. There were arguments and it wasn't very productive.

Some students felt like they could not move on as quickly as they would have liked because their partner didn't understand the work as well.

Sometimes group members argued when they couldn't agree on how to solve a problem.

At times, some students preferred to work alone because they felt like they did more work than their partner.

Collaboration was a challenge for 6 of the 13 students in the AP CSP course.

How to Help

Addressing Collaboration Challenges in CS Classrooms

The following recommendations are informed by research-based practices for supporting students who learn differently, combined with the practical expertise of our team learning specialists and study findings.

Intentionally place students in partners or groups that will be supportive of learning differences to minimize difficulties that could arise because of social skills or other factors.

Explicitly state that students will work or problem-solve together (not just work in parallel). **Review guidelines** and **model strategies** for students on how to work together (e.g., only one person talks at a time; everyone accepts feedback; listen actively; people can share differences of opinion). Guidelines can be posted in the classroom as a visual reference.

When appropriate, **assign group roles** for students (e.g., such as being a recorder) to provide some accountability and help students stay focused on the assigned task.

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