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Chicago Alliance For Equity in Computer Science (CAF ECS): Cycles of Improvement

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The Learning Partnership

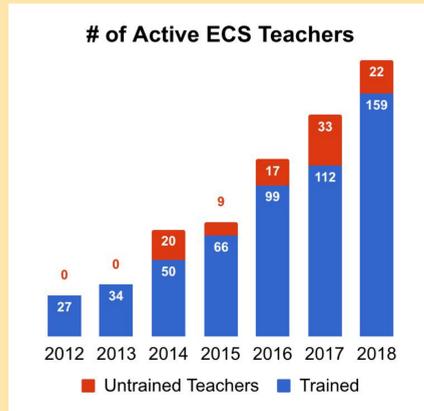
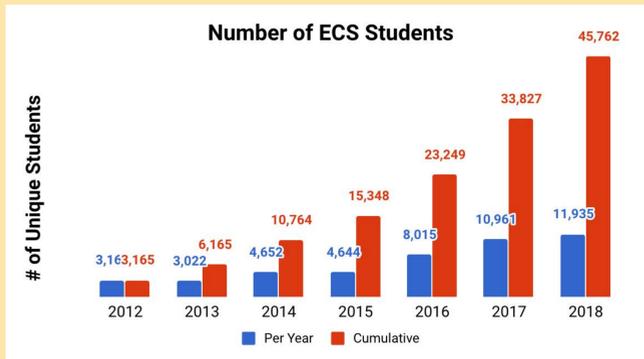
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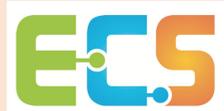
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Growth of ECS in CPS



Foundations



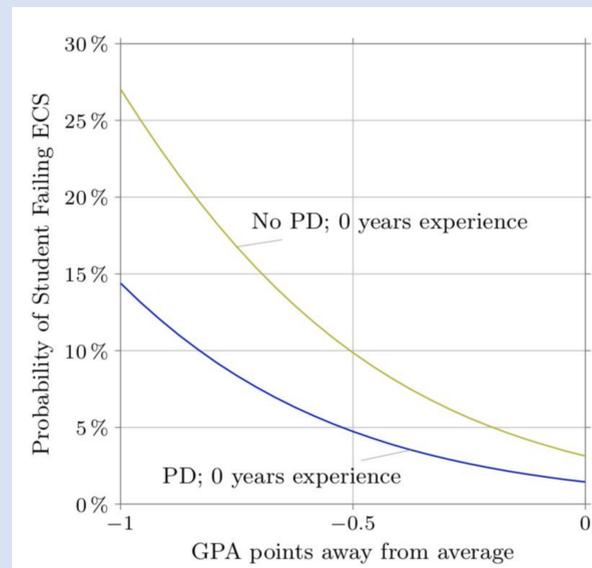
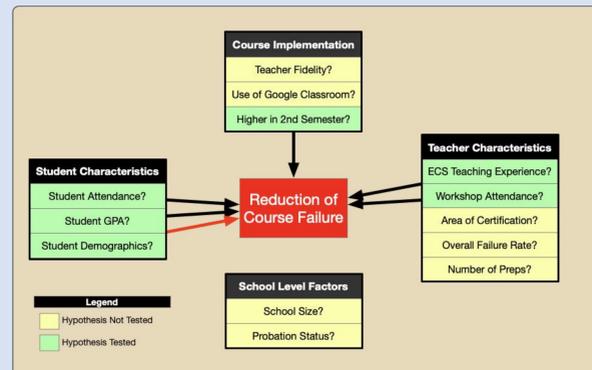
ECS is the primary course that students have been using to fulfill the graduation requirement in CPS. The ECS curriculum is composed of activities that are designed to engage students in CS inquiry around meaningful projects. The pedagogy of ECS is structured around three interwoven strands: *equity*, *inquiry*, and *CS concepts*. The ECS professional development program is designed to prepare teachers to implement these inquiry-based activities while also guiding teachers in building a classroom culture that is culturally responsive and adapting lessons to the backgrounds and interests of the students.

Course Units

- Human Computer Interaction
- Problem Solving
- Web Design
- Introduction to Programming
- Computing and Data Analysis
- Robotics



Collaborative Problem Solving



Assessing CAFÉCS

Erin Henrick

Building Trust and Cultivating Partner Relations

- Collaborative decision-making is a hallmark of CAFÉCS ethos and meetings
- Team members value diverse expertise of the group to inform research design

Conducting Research to Inform Action

- CAFÉCS members share a common goal: to support CPS to bring CS to all students
- Weekly and monthly meetings provide a space for problem-solving and brainstorming
- Data sharing MOU
- CAFÉCS whole team meetings offer learning opportunities:
 - Problem solving and brainstorming
 - Discussions to build common understandings towards shared goals, vision, purpose
 - Sharing research findings

Supporting the Practice Partner in Achieving Its Goals

- CAFÉCS arms CPS staff with relevant research that guides implementation (e.g., sharing failure rate results with principals led to near 100% PD attendance.)



Examples of CAFÉCS Research

- ECS supports large increases in computational thinking; outcomes by race and gender are equivalent
- ECS support a “chain of cognitive accomplishments” approach to development of programming expertise
- Students who take ECS first are significantly more likely to take another CS class (about 1/3 continue)
- Perceived value of the course increases interest in CS

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