Broadening Participation: ECS & CSP

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CS & IT. July 2012. Irvine, CA. Online At: ExploringCS.org & CSPrinciples.org
popular understanding of cs culture?

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read the article at: bit.ly/csit-hackerhostels
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how are we working to address this?  
ECS and CSP

we’re not just changing content, we’re changing how CS is taught and, in turn, who chooses to take it.
let’s revisit those key phrases

- women < 1
dave
- deficit thinking
- tool fascination
- engagement and relevance

- success != big numbers
- image: perception vs reality
- fostering community
- broadening participation
discussion format

part one: what’s the problem here? (framing the discussion)

part two: stories and lessons from *Stuck in the Shallow End*
- three themes pulled from the book. for each theme:
  - two-minute small group discussion
  - ten-minute large group, town hall style discussion.

part three: what it means
technology rich, curriculum poor

“None of these assignments featured the problem solving and scientific reasoning that is the foundational knowledge of computer science; none capitalized on the high-level processing power that is central to the field of computer science; and none situated it in real-world scenarios that emphasized the wide applicability of computer science expertise.”

“There are some students that just because of their background ... they don’t know how to problem solve ... They don’t have that curiosity because they’ve been spoon-fed their whole life. They don’t have that ability or desire to figure things out or explore.”

“The problem ... was not necessarily the dearth of computers on campus but rather the challenge of supporting and maximizing the use of the computers the school did have. [These are] examples of how hopes hang on technology to be the magic bullet to improve academic achievement. Yet both schools illustrate how access and academic achievement (or the lack of it) are the result of deep structural issues that require much more than a technological solution.”

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discussion questions:

technology rich, curriculum poor

with your group, discuss the following:

• how have you seen this issue play out in your school?
• what strategies have/would you use in the classroom to deal with it?
• if you have not seen anything like this, what questions do you have?
normalizing the racial (and gender) divide

“The boys in the class were older, mostly juniors and seniors who were the ‘techies’ of the school, the ones most interested in technology, sparked largely by video games and, in many cases, their social networks outside of school. For instance, Fernando, a twelfth grader, was considered by the teacher and his classmates to be the most knowledgeable programming student. He became interested in computing through a male friend of his, outside of school, who taught him how to build and host Web sites for extra money—an endeavor that served as a part-time job for Fernando throughout high school.”

“The lasting effects of low expectations, a lack of access to rigorous courses, and de facto tracking practices are that African American and Latino/a students are far more likely to be judged as having learning deficits, and to be placed disproportionately in low-track remedial programs where they have less access to high-status knowledge, powerful learning environments, and resources.”

As the researchers conclude, “Images of group competencies and patterns of racial segregation in extracurricular activities work hand-in-hand to legitimize beliefs that groups differ in their interests and abilities.”
discussion questions:
normalizing the racial (and gender) divide

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“preparatory privilege”

“This ‘academic currency’ consideration is big at schools ... that have a college preparatory focus, and helps to explain why the AP computer science courses remain insular and dominated by a narrow band of students who are already well versed in the subject matter.”

“A common theme in our interviews with educators ... was the perception that many traveling students attended elementary and middle schools that did not prepare them for the academic rigors.”

“As they navigate the sometimes-murky waters of college preparation, students rely on the advice of “experts”—in particular, counselors—to guide them toward their goals, to help them make decisions. This is particularly true for students who do not have a parent who has attended college and therefore require greater input from sources outside the home. Too often, however, counselors (whether intentionally or not) reinforce messages that call into question the academic ability of students of color and their rightful place on an accelerated educational track.”
discussion questions: “preparatory privilege”

with your group, discuss the following:

• how have you seen this issue play out in your school?
• what strategies have/would you use in the classroom to deal with it?
• if you have not seen anything like this, what questions do you have?
who is going to change this?

central players

- students
- teachers
- counselors
- parents
- local administration
- state administration
- politicians? lobbyists? policy folks?
- others?
how are we working to address this?

ECS and CSP

again: we’re not just changing content. we’re changing how cs is taught and who chooses to take it.

beyond that-- we are working to build community, and real community can not just exist in the cloud. online pd, content, and pedagogy are not enough. we have to come together, face to face, and address these issues.

these problems aren’t going to solve themselves.