

Disseminating Research Results to K-12 Practitioners

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Presentation Overview

- What is CSTA
- Why working with K-12 is so important
- The content disconnect
- The environment disconnect
- The dissemination challenge
- Keys to successful dissemination

What is CSTA

- CSTA was formed by ACM in 2005 to address the multi-issue crisis in K-12 computer science education
- We are many things to many people:
 - Membership organization (over 4000 members)
 - Advocacy organization (providing information about our discipline)
 - Professional development provider (JETT, TECS, CSIT)
 - Research organization (surveys, white papers, policy documents)
 - Resource developer and provider
 - A community dedicated to computer science teaching and learning
- Our big issues:
 - Shrinking pipeline and underrepresented populations
 - Lack of curriculum standards
 - Inappropriate and ineffective teacher certification standards
 - Teacher isolation
 - Lack of relevant professional development
 - Lack of understanding of our discipline

Why Working with K-12 is Important

- College is far too late! By the time students come to college, their ideas about computing are already well-formed and here is what far too many have decided:
 - There are no jobs in computer science because they are all being outsourced
 - Computer science is about sitting in a cubicle and writing code 18 hours per day
 - Computer science is a male field
 - Computer science has nothing to do with solving real-world problems
 - Computer science is about designing video games
 - Computer scientists have no life
 - Computer science is too hard

The Content Disconnect

- There is a disconnect between what we have and what K-12 teachers require
- We have:
 - Research results
 - Entire courses/curricula
 - New software applications
- They want:
 - Lesson plans, worksheets, teachers' manuals
 - Learning modules that will fit into their existing curriculum and address district, state, and federal standards
 - Things that make their lives less and not more complicated
- There is a disconnect between what we think they need and what they think they need

The Environment Disconnect

- We too often assume that:
 - the K-12 teaching environment is like the post-secondary or normal workplace environment
 - our priorities are their priorities
 - teachers have time to read research
 - teachers understand how to evaluate and apply research
 - teachers actually have control of their own time
 - we can change their lives with a single workshop
 - we can make quick or systemic changes to education without long term commitment, buy-in, resources, and help

The Dissemination Challenge

- Reasons that we fail to reach the teachers
 - We do not involve teachers in our research planning to ensure that what we are doing is relevant to them
 - We publish our results in magazines and journals for our peers rather than for teachers
 - We give presentations at conferences attended by our peers rather than by teachers
 - We package our information in ways that are not easily accessible to teachers (the standard research format)
 - We think if we build a website, they will come
 - We think if we send them an email, they will get it (the firewall problem) and they will read it (the triage problem)
 - We do not effectively communicate how our research will address their concerns
 - We do not plan for the long-term supportive relationship required to achieve real change

Suggestions

- Contact the professional association for your targeted academic discipline to get a sense of what teachers perceive the issues to be (CSTA, NSTA, NCTM)
- Involve teachers in your research planning process
- Develop an understanding of the K-12 teaching environment
- Use your research as a springboard for developing and distributing classroom-relevant resources
- Give presentations at teachers conferences
- Publish in teacher magazines and journals
- Find creative ways to work with associations to distribute your materials directly to teachers
- Build funding for physical distribution channels (direct mail) into your grant proposal
- Remember that the change process in the K-12 environment is extremely slow and requires long-term commitment and support to ensure sustainability

How CSTA Helps Researchers

- We are building a searchable online repository of resources keyed to the *ACM Model Curriculum for K-12 Computer Science Education*. The repository will be operational by summer and we welcome resources from research projects
- We conduct research and provide data to researchers and educators
- We cover interesting research stories in our organizational publication (*the Voice*)
- We help CSTA's institutional members do direct outreach to our membership via directed email, web announcements, calendar announcements, etc.
- We use our yearly Computer Science and Information Technology Symposium as a way of exposing teachers to new ideas, skills, and pedagogy
- We advocate for STEM funding and initiatives
- We use our public relations outreach to inform people about the importance of computing education as a means to ensuring competitiveness and innovation

Contact Information

CSTA Web Site:

<http://csta.acm.org>

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<http://blog.acm.org/csta/>

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