Recruiting Diverse Learners to High School Computer Science

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Methodology
The RPP mechanism affords educational partners an avenue to explore best practices and strategies as presented in academic and practitioner published research. It also provides the opportunity to share actual practices being used in the field around those same issues.

Communication & Outreach
• Outcomes-focused
• Credible and valued source
• Platforms for high engagement

Institutional Practices & Policies
• Remove barriers
• Increase awareness
• Increase exposure to CS

Institutional Practices & Policies & Cross-curricular engagement
Collaborative learning
Inclusive classroom practices
Culturally relevant pedagogy

Increased DEI in CS Courses
• Increased self-efficacy
• Increased achievement
• Consideration of CS careers/education

Increased DEI in CS Workforce
• Being unique and necessary knowledge, skills, and abilities

Institutional Practices & Policies & Instructional
Curricular, Project-Based Coursework
Engage students in collaborative work such as pair programming

Cross-curricular, Project-Based Coursework
• Work with teachers to bring CS into classrooms in other subject areas
• Allow students the space to bring their own interests to their work in CS
• Utilize culturally-responsive pedagogies and tools to reach and retain typically underrepresented students

Area
Key Issues
Outcomes
• Meet audience where they are
• Communicate based on their needs, experiences, predispositions, goals, and values
• Effective communication is relevant, timely, trusted, and actionable
• Tell your audience why they should care about the topic and what they can do

Use the Right Tools
• Create properly “packaged” messages
• Use emotional appeals, fact sheets, or other information as needed
• Use a source and channel that will reach and engage most of your audience
• Consider sending personalized letters home or hand-delivering flyers

Tailoring Communication & Messages
• Assess audience knowledge, beliefs, and expectations for CS learning
• Focus on what outcomes are valued by the audience

Audience Analysis
• Convey audience benefits and results of audience analysis
• Convey communications tailored to each partition of the audience

Audience Segmentation
• Consider what forms of media each group interact with and what they respond to

Area
Practices
Access, Prerequisites, & Sequences
• Begin recruiting 8th graders to high school CS through course planning
• Purposely reframe the necessity of existing pre-requisites
• Ensure that course sequencing offers options for student choice and no “dead ends”

Status & Branding of CS Courses
• Place CS courses in course scheduling systems/catalogs in an easy-to-find place
• Consider renaming CS courses to accurately reflect content and recruit students
• Leverage connections with guidance counselors to make students aware of what CS is, and what it isn’t

CS Curriculum & Pathways
• Provide spaces for MS and HS teachers to collaborate on creating a continuous CS pathway to remain students
• Design course pathways that include wide-reaching, varied entry points to CS
• Mindfully articulate curriculum across courses to avoid repeated material while preparing students to progress along course sequences

Student & Parent Engagement
• Grow community culture and belief around CS through outreach rooms
• Create accessible, inviting spaces for parents to learn about CS and its possibilities
• Support after-school clubs and organizations to build excitement
• Establish and maintain partnerships with neighboring districts, higher education, and industry

Area
Practices
Recruit from Inside & Outside the Classroom
• Utilize unplugged activities to cultivate a computational thinking mindset
• Incorporate CS concepts outside the classroom to reach larger audience (clubs, events)
• Engage students in collaborative work such as pair programming

Background
Inquiries in computer science education (KSE) are profound and widespread. Increasing diversity, equity, and inclusion (DEI) in CS ensures that:
• Industries benefit from diverse perspectives
• Progress is made in addressing social justice issues
• CS workforce will see greater diversity & representation

Given the importance of proactive and intentional recruitment of historically underrepresented students to KSE, we have leveraged our work within a researcher-practitioner partnership (RPP) to explore recruitment strategies that are both being used and/or have been shown to be productive in practice.

The RPP mechanism affords educational partners an avenue to explore best practices and strategies as presented in academic and practitioner published research. It also provides the opportunity to share actual practices being used in the field around those same issues.

Through conversations with teachers, administrators, guidance counselors, and other stakeholders, combined with insights gleaned from RPP meetings, semi-structured interviews, and an inventory of internal online forums, we have compiled past experiences, current practices, and future plans into a three-staged approach to recruit and retain diverse students in CS.