Chapter 7.13
Enhancing Inclusion in Computer Science Education

Donald D. Davis
Old Dominion University, USA

Debra A. Major
Old Dominion University, USA

Janis V. Sanchez-Hucles
Old Dominion University, USA

Sandra J. DeLoatch
Norfolk State University, USA

Katherine A. Selgrade
Old Dominion University, USA

Shannon K. Meert
Old Dominion University, USA

Nikki L. Jackson
Norfolk State University, USA

Heather J. Downey
Old Dominion University, USA

Katherine M. Fodchuk
Old Dominion University, USA

INTRODUCTION AND BACKGROUND[1]

We describe an intervention that uses computer science (CS) faculty and students to create an inclusive learning environment. Our intervention model assumes that persistence and retention are the result of a match between student motivation and abilities and the university's social and academic characteristics. This match in turn influences the effective integration of students with the university and, as a result, their persistence and retention (Cabrera, Castaneda, Nora, & Hengstler, 1992; Tinto, 1993). We are currently implementing and evaluating this intervention at Old Dominion University, a research intensive urban university with a culturally diverse student body, and Norfolk State University, an urban and historically black university (HBCU) that primarily emphasizes teaching.

A MODEL FOR CREATING INCLUSIVE LEARNING ENVIRONMENTS

## Organizational Support for Faculty and Students

This portion of our model depicts external resources available to support change in faculty and students (see Figure 1). Support for faculty includes peers, teaching assistants, and external consultants who provide assistance in areas targeted for change, for example, pair programming practices. Support for students includes academic resources such as tutoring, advising, and mentoring. Professional organizations, such as the Association for Women in Computing, may provide support to both faculty and students.

Changing Faculty

We focus on faculty because they influence student outcomes. The intervention concentrates on faculty who teach introductory programming classes because these classes represent the first and largest barrier to success in CS. We build on

Figure 1. Intervention model for creating inclusive learning environments
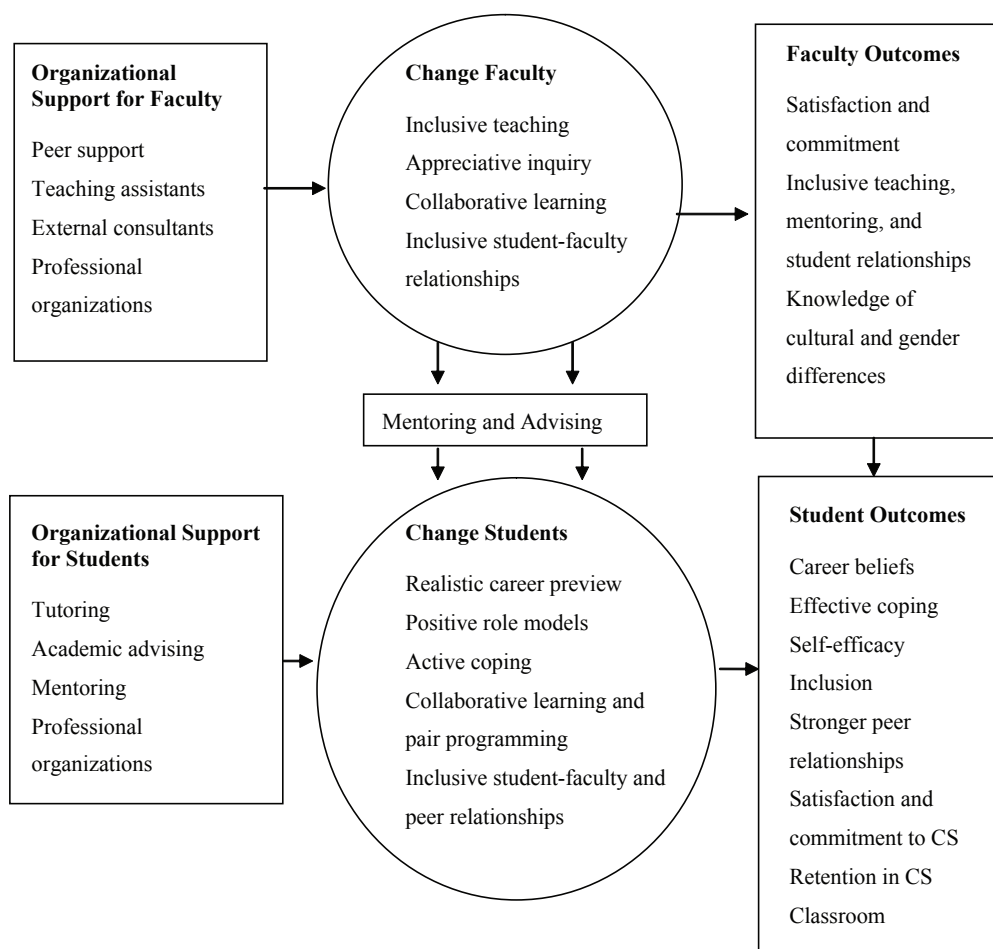
Related Content

Delivery Technology
Kim E. Dooley, James R. Linder, Larry M. Dooleyand Walt Magnussen (2005). *Advanced Methods in Distance Education: Applications and Practices for Educators, Administrators and Learners (pp. 162-181).*
www.irma-international.org/chapter/delivery-technology/4268

Developing Creativity as a Skill and Disposition in Learners: An Approach to Teaching Creative Thinking Creatively in Blended Business Education
Ryan Payneand Deanna Grant-Smith (2023). *Emerging Trends and Historical Perspectives Surrounding Digital Transformation in Education: Achieving Open and Blended Learning Environments (pp. 228-253).*
www.irma-international.org/chapter/developing-creativity-as-a-skill-and-disposition-in-learners/327498

Recognizing the Inequalities in Remote Learning Education
Deanne J. Tucker-White (2021). *Handbook of Research on Inequities in Online Education During Global Crises (pp. 77-96).*
www.irma-international.org/chapter/recognizing-the-inequalities-in-remote-learning-education/278468

LAN-Designer: A Software Tool to Enhance Learning and Teaching Server-Based LAN Design
Nurul I. Sarkar (2005). *International Journal of Information and Communication Technology Education (pp. 74-86).*
www.irma-international.org/article/lan-designer-software-tool-enhance/2263

Effectiveness and Satisfaction of a Proposed Strategy to Provide Electronic Feedback Based on Authentic Learning Principles in Princess Nourah University
Hessah Mohammed Alshaya (2019). *International Journal of Information and Communication Technology Education (pp. 128-145).*
www.irma-international.org/article/effectiveness-and-satisfaction-of-a-proposed-strategy-to-provide-electronic-feedback-based-on-authentic-learning-principles-in-princess-nourah-university/239840