

Chapter 7.13

Enhancing Inclusion in Computer Science Education

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INTRODUCTION AND BACKGROUND¹

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

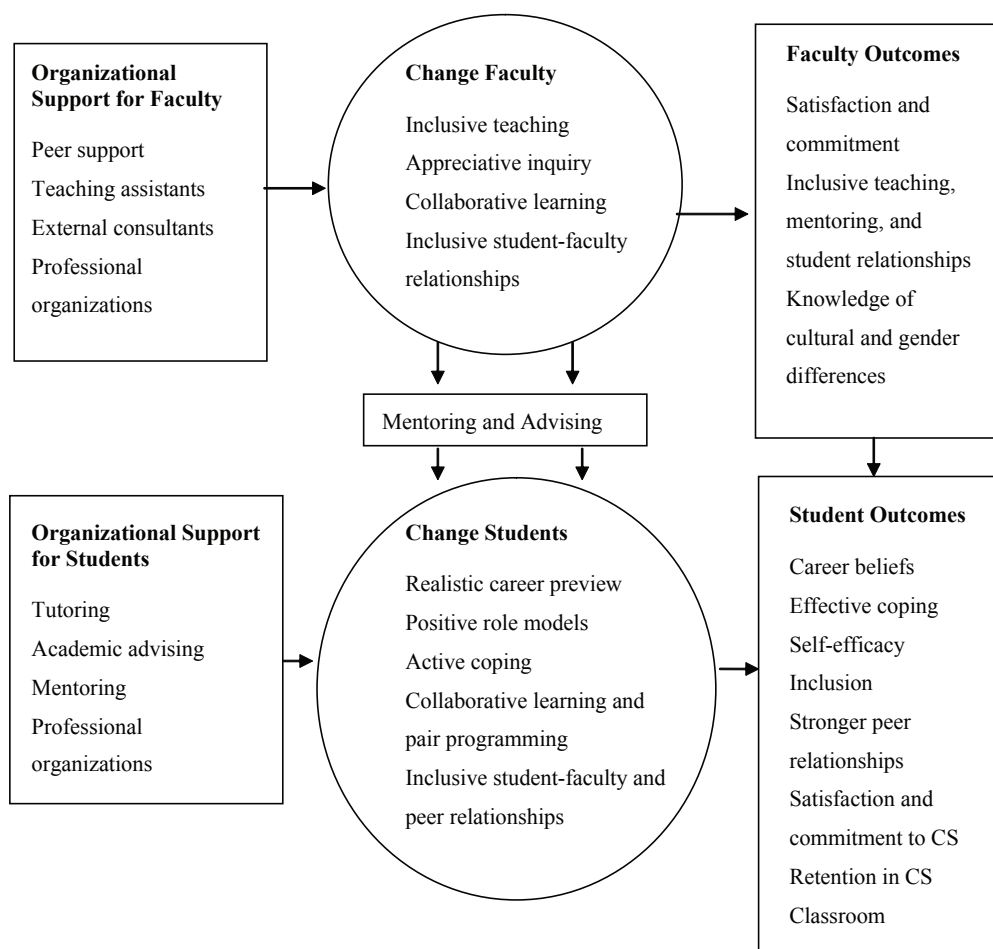
This portion of our model depicts external resources available to support change in faculty and students (see Figure 1). Support for faculty includes peers, teaching assistants, and external consultants who provide assistance in areas targeted for change, for example, pair programming

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



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