Effective Practices of Formal Mentoring Programs

Lisa Dobson

It is well documented that women and racial minorities are underrepresented with Science Technology Engineering and Mathematics (STEM) fields (National Science Foundation, 2013). Potential explanations include that these students feel unwelcome and unsupported within their academic departments. Mentoring, often in conjunction with other intervention services, can provide access and enable success that these students might otherwise not experience.

Companies, organizations, and institutions commonly implement mentoring in order to support junior members. Mentoring can also be used to socialize novices to the norms or common practices of a particular organization. Mentoring relationships can evolve in an informal or formal context between peers or between an experienced and inexperienced pairing. This brief focuses on formal mentoring relationships between university faculty and students.

What is Mentoring?

Within the context of postsecondary education, the goals of mentoring can be viewed as a way to support students as they enter college and progress through their degree programs, as well as provide them with resources to become successful in their fields (Brown, Davis & McClendon, 1999). These resources include advice on how to navigate college or degree program, counsel on graduation requirements, exposure to available careers or graduate programs within their field, or professional networking.

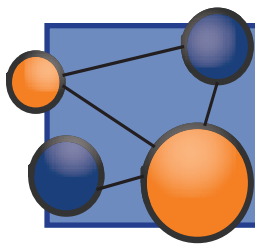A mentoring relationship traditionally involves an inexperienced mentee and a senior member of a particular field. In these mentoring relationships, the experienced member encourages, supports, and trains the mentee. Within academic settings, the mentor-mentee relationship is distinct from the advisor-advisee relationship because it includes interactions designed to aid students emotionally, academically, and professionally, but typically fall outside normal academic advising, which typically focuses on the academic development of a student (Brown, Davis & McClendon, 1999).

Benefits of Mentoring

The existing literature on mentoring demonstrates that mentoring is a positive and beneficial experience for students. Campbell & Campbell (1997) found that undergraduate students with a faculty mentor tend to have higher grade point averages, earn more credit hours, and drop out less frequently than students who do not have a faculty mentor. Students who participate in a mentoring program tend to have greater academic success and are more satisfied with their university experience than their non-mentored peers (Berman, Blake-Beard, Hunt, & Crosby, 2007; Cosgrove, 1986; Waldeck, Orrego, Plax, & Kearney, 1997). Additionally, Campbell, Smith, Dugan & Komives (2012) found that mentoring leads to the development of coping skills, willingness to challenge themselves and attempt new experiences, and an ability for self-reflection in undergraduate students.

Effective Mentoring

The literature reviewed above suggests that when implemented well, mentoring represents a positive, effective intervention. According to P-Sontag, Vappie, & Wanberg (2007), key aspects related to effective mentor-

ing programs include:

• *Thoughtful matching process between faculty mentor and mentee.*

In academic mentoring, some may think matching by race, gender, or research interest should occur (Blake-Beard, Bayne, Crosby & Muller, 2011). Although this approach to pairing a mentee to a mentor is sometimes useful, effective mentoring of students can occur across different races and genders. Mentors provide support grounded in their understanding of individual students, not the race or gender of a student alone.

• *Consideration for career and emotional aspects of mentees' lives.*

Mentoring should both aid students in their emotional well-being throughout their program and also provide career and academic guidance.

• *Commitment to the relationship.*

Both parties need to be committed to the mentoring relationship to maximize the success of the relationship (Chao, 2009). Agreement between mentor and mentee should be reached on the learning and professional goals of the relationship, how the relationship will be maintained, and what the relationships will look like (Mullen & Schunk, 2012).

• *Training.*

Mentoring relationships may not come naturally to all participants in formal mentoring programs, so the leadership of the program should provide programmatic and training to support mentors' needs. Training and support also help build commitment and motivation to the mentoring relationship.

Potential Challenges to Effective Mentoring

One approach to formal mentoring programs is to match STEM minority students with faculty mentors of the same race or gender. While some students of color and women in STEM fields have expressed a preference for race and gender matching, there are some practical limitations to accomplishing that task (Blake-

Beard, Bayne, Crosby & Muller, 2011). The numbers alone indicate that there is not enough faculty of color to effectively mentor all students who match them in gender or race. Thus, white faculty must also mentor students of color (Patton, 2009). With quality training and an ability to understand their mentees, white faculty members can effectively mentor students who do not match them in race (Brown, Davis & McClendon, 1999). Students may initially have some discomfort being match with a faculty mentor of a different race, but it should not be used as an excuse for white faculty to not mentor students of color (Patton, 2009).

Concluding Remarks

By providing proper support and guidance, faculty members can help contribute to the academic and professional success of their mentees. With proper commitment and care given to mentoring relationships, the relationship benefits last far beyond students' time at their university. Further, mentoring has the potential to change the professional and academic outcomes of students. As a result, it is important that all students, regardless of race, gender, or academic interest, have access to these relationships to aid them in their academic endeavors.

Further Resources

• Responsible Conduct of Research: Mentoring is a learning module covering information about various forms of mentoring and suggestions for practice.

• How to Obtain the Mentoring You Need provides an online guide to aid students with common concerns and questions about faculty mentoring

• Mentoring: A Guide for Faculty explains mentoring and suggests strategies for mentoring diverse students, including international students, students with disabilities, and students from disadvantaged socioeconomic backgrounds.
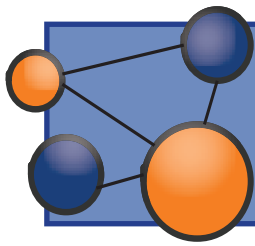
Math Alliance Research Study

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About the Author

Lisa Dobson is a graduate student in Curriculum and Instruction at the University of Illinois at Urbana-Champaign. She taught middle and high school mathematics in Houston, Texas, before deciding to pursue an advanced degree. Her research interests include how to individually support students to find success in mathematics and factors that influence students' decisions to pursue STEM careers.