Mentoring Perceptions and Experiences of Minority Summer Research Opportunity Program Participants

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Introduction

For years mentoring in higher education has been purely a relationship between graduate student and major professor, but now more focus is being paid to the mentoring that takes place for undergraduates as a way to increase retention and as a tool of enrichment of the overall undergraduate experience (Jacobi, 1991). One critical aspect of many Undergraduate Research Opportunity Programs (UROPs) and Summer Research Opportunity Programs (SROPs) is the role of mentors (Gaffney, 1995; Kinkead, 2003). Under the guidance of a mentor, undergraduate research is seen as a scholarly activity that helps to promote scientific inquiry, experiential learning, scholarship, career development among other functions (Kinkead, 2003).

Mentoring is a key component of most UROP/SROPs, especially programs that are aimed at increasing the presence of women and minority students in, science, technology, engineering, agriculture, and mathematics (STEAM) fields. The majority of students that participate in SROPs happen to be minority students and it is through SROPs that these students are exposed to more educational and career opportunities (Crawford, et al., 1996). Several studies have documented an increase in retention and persistance among minority students to pursue advanced degrees, and remain in the academy when mentoring is made available to them (Crawford et al.,1996; Tenenbaum, Crosby, & Gliner, 2001; Thomas, Willis, & Davis, 2007).

Because various thoughts of quality mentoring in undergraduate research programs exist, it is important that a mentoring model be developed identifying key functions necessary for undergraduate interns to have a meaningful mentoring experience. To date, there have been few empirically-based studies examining the perceptions of mentoring and mentoring experiences of minority students in SROPs.

Purpose

The purpose of this study was to explore and compare the mentoring perceptions and experiences of minority summer research program participants.

Functions of the Mentoring Model

Mentoring involves behaviors that can be defined, learned and practiced (Wunsch, 1994). With this in mind, based on a comprehensive review of the literature seven mentoring functions were identified which have been shown as being highly important in undergraduate research programs. The functions used in our model include: 1) clarity of project, 2) challenging assignment, 3) training for the intern, 4) contact between mentor and intern, 5) assistance 6) feedback, and 7) role modeling.

Methods

Former interns were sent a link to an online questionnaire that contained 37 items measuring the interns' perceptions of mentoring and 37 items measuring the interns' mentoring experience. The statements were measured using a four point Likert-type scale (1=Strongly Disagree to 4= Strongly Agree). Statements corresponded with one of the seven selected mentoring functions. The population of this study consisted of (*N=78*) former interns from 2006-

2008 who participated in the Alliance for Graduate Education and the Professoriate and the George Washington Carver Internship Program. Forty-two questionnaires were returned resulting in a 54% response rate.

Findings

After participating in one of the SROPs, 84% of participants decided to pursue an advanced degree, while 38% of the interns indicated that their mentoring experience was better than expected. Forty-one percent of the interns noted that after this experience they were very likely to participate in another undergraduate research program. Three open ended questions were asked to students to better understand their mentoring experience. When asked to provide suggestions to enhance the mentoring experience three major themes arose. The three themes were 1) training, 2) contact and 3) clarity of project; each of these themes was named for the functions that they represent.

As related to the mentoring perceptions scale the challenging assignments function had the highest mean value ($M=3.57$); while the training function had the lowest mean value ($M=3.12$). The scale measuring the interns' mentoring experience indicated significantly lower mean values with the challenging assignments function having the highest mean value ($M=3.37$) and the training function having the lowest mean value ($M=2.77$). A paired sample t-test was conducted comparing the interns mentoring perceptions to their actual experience. Results indicated a significant ($p<.05$) difference between the interns perceptions of mentoring and their actual mentoring experience.

Conclusions, Implications, and Recommendations

From these findings we can conclude that the interns' perceptions of what will occur throughout their mentoring process are not being met. Program coordinators must emphasize the importance of practicing the seven mentoring functions to mentors. We can also conclude that SROPs are helping encourage minority students to pursue advanced degrees and helping them define their educational/career path. From the open-ended questions we observed that the functions training, contact and clarity of project are important to the students that participate in these programs. Program coordinators must begin to emphasize the importance of these three functions to mentors for students to continue to have meaningful mentoring experiences. To improve the mentoring aspect of SROPs, we recommend that SROP coordinators implement the seven mentoring functions into their programs. We also recommend that coordinators host mentoring workshops to introduce mentors to the seven mentoring functions and the importance of these functions when mentoring minority students. Further research is needed to determine the impact of the seven mentoring functions on the mentoring experience of SROP participants. Further research is also needed to determine the mentors' perception of the seven mentoring functions and the extent to which they are practiced by the mentor.

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