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Mentoring College Students: A Critical Review of the Literature Between 1990 and 2007

Gloria Crisp · Irene Cruz

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Abstract In response to the mounting national support provided to mentoring programs and initiatives in higher education, the present article updates a review article written by Jacobi (Rev Educ Res 61(4):505–532, 1991). The article revisits the mentoring literature in an attempt to re-frame and update the definition and characteristics of mentoring provided by Jacobi. It also synthesizes and critically analyzes empirical literature specific to mentoring college students published between 1990 and 2007. Finally, the article presents broad theoretical perspectives of mentoring from the business, psychology and education literature in preface to a proposed theoretical framework specific to mentoring college students. The article concludes with specific recommendations to advance the mentoring literature.

Keywords Mentoring · College students · Student success · Literature review

The winter 1991 issue of *Review of Educational Research* included a review article by Maryann Jacobi specific to mentoring and the academic success of undergraduate students. The article highlighted some major concerns regarding the concept of mentoring as it applies to the academic success of students. More specifically, Jacobi recognized the *lack in understanding of*: a common definition and conceptualization of mentoring; the prevalence of both informal and formal mentoring relationships; the extent, and ways in which mentoring contributes to academic success; and the mentoring functions that are most important to the academic success of college students.

Despite the severe underdevelopment of the mentoring literature, the value of mentoring has long been accepted in the literature as well as in practice (Cohen 1993). In turn, mentoring has become a national priority (Girves et al. 2005) as demonstrated by hundreds of formalized programs and institutional practices that include a mentoring component,

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which have been implemented at the national, state and local level. Though the progress of the mentoring literature appears to have grown steadily, it has lagged behind program development and implementation efforts and has yet to adequately resolve the issues broached 16 years ago by Jacobi (1991). Most notably, it appears that mentoring research has made little progress in identifying and implementing a consistent definition and conceptualization of mentoring, is largely atheoretical and is lacking in terms of rigorous quantitative research designs that allow for testing the external validity of findings. There is a need, therefore, for an updated review of the literature with regard to mentoring to provide guidance to faculty, institutional researchers and student affairs personnel in the development, evaluation, and analysis of future mentoring research.

As such, the following article revisits the mentoring literature in an attempt to re-frame and update the definition and characteristics of mentoring provided by Jacobi (1991). The article begins with an updated examination of the definitions and characteristics of mentoring within the education, business and psychological literature. Second, a critical analysis of the empirical studies specific to mentoring both undergraduate and graduate students between 1990 and 2007 is provided, highlighting methodological and measurement issues as well as issues specific to special student populations. The third, and arguably the most important contribution of the present article, is an evaluation of the current theoretical perspectives of mentoring from the business, psychology and education literature in preface to a proposed theoretical framework specific to mentoring college students. The article concludes with specific recommendations for practice and future research.

Method

The present study incorporates findings of two literature reviews—theoretical review of mentoring in the education, business and psychological literature and a more narrowly focused empirical review specific to studies examining the impact of mentoring college students on some aspect of student success (e.g., retention, grades, social integration, satisfaction with college, adjustment to college). The first review included a review of 52 theoretical essays and empirical studies that centered on the development and/or testing of a mentoring theoretical framework in journal articles, book chapters, and dissertations published up to 2007 in Academic Search Complete, Business Source Complete, Education Full Text, EBSCO, JSTOR, and Psychology and Behavioral Science databases. Findings from this review are used in the theory-focused sections of the article.

The empirically based section of the manuscript are written from a second literature review that utilized 42 journal articles and national conference presentations published in Academic Search Complete, EBSCO, JSTOR, and Education full text databases utilizing key words “mentoring” and “college students.” It should be noted that articles addressing aspects or characteristics of mentoring (e.g., faculty and student interaction), but that did not explicitly refer to the experiences as “mentoring” may have been excluded from review. Due to a shortage of high quality, methodologically rigorous studies, our review was open to all empirically based journal articles published between 1990 and summer 2007 that contained the major elements of an empirical study (i.e., introduction, method, data analysis, results, conclusions). In contrast to Jacobi (1991), who exclusively reviewed articles centered on undergraduate students in the United States, the review included research using both undergraduate and graduate student populations in the United States

and abroad. Studies that investigated other populations such as primary and secondary students, teachers, and faculty members were excluded.

Results

Definitions and Characteristics of Mentoring

Mentoring is not a new concept as it may date back as far as the Stone Age (Dickey 1996). The origins of the word “mentor” stem from Greek methodology. In the *Odyssey*, the main character, Odysseus, entrusts his friend, Mentor, to help him prepare to fight in the Trojan War. Mentor serves as a wise, responsible and trusted advisor who guides Odysseus’s development (Miller 2002). Despite its long history, there is currently an absence of a widely accepted definition (Dickey 1996; Johnson 1989; Miller 2002; Rodriguez 1995; Zimmerman and Danette 2007) and a lack of theory to explain what roles and functions are involved in a mentoring experience and how these experiences are perceived by college students (Jacobi 1991; Haring 1999; Merriam 1983; Philip and Hendry 2000).

Results of the present review provide additional evidence to support the perceived ambiguity within the literature, as over 50¹ definitions, varying in scope and breadth were identified. It should be noted that this ambiguity surrounding the definition of mentoring is further obscured by inconsistencies in how the “mentoring” has been used throughout the literature. For instance, while some researchers have used the term mentoring to describe specific set of activities conducted by a “mentor” (e.g., Bowman and Bowman 1990; Brown et al. 1999; Campbell and Campbell 1997; Freeman 1999; Watson 1999), other researchers have defined mentoring in terms of a concept or process (e.g., Anderson and Shannon 1988; Blackwell 1989; Roberts 2000).

Moreover, the literature includes definitions specific to, and reflective of the researcher’s discipline. For instance, Roberts (2000), approaching mentoring from a business perspective, has defined it as “a formalized process whereby a more knowledgeable and experienced person actuates a supportive role of overseeing and encouraging reflection and learning within a less experienced and knowledgeable person, so as to facilitate that person’s career and personal development” (p. 162). Similarly, Campbell and Campbell (1997) have considered mentoring as a set of behaviors in which experienced, more seasoned members of the organization provides guidance and support to less experienced employees to increase the likelihood that new employees become successful members of the organization. In contrast, psychologists Levinson et al. (1978) have focused their definition on supporting the psychosocial development of an individual through another person who provides moral and emotional support.

Within the context of higher education, the absence of a consistent definition of mentoring has been repeatedly recognized (e.g., Dickey 1996; Johnson 1989; Miller 2002; Rodriguez 1995). Existing definitions of mentoring offered have often been extremely broad or even lacking entirely. For instance, Brown et al. (1999) and Murray (2001) broadly defined mentoring as a one-on-one relationship between an experienced and less experienced person for the purpose of learning or developing specific competencies. Blackwell (1989) has defined mentoring in more specific terms stating that mentoring “is a process by which persons of a superior rank, special achievements, and prestige instruct,

¹ This figure compares to 15 definitions identified in 1991 by Jacobi.

counsel, guide and facilitate the intellectual and/or career development of persons identified as protégés” (p. 9).

In other cases, educational researchers have not explicitly provided readers with an operational definition of mentoring (e.g., Boice 1992; Bordes and Arredondo 2005; Cronan-Hillix et al. 1986; Lee 1999; Mangold et al. 2003; Rodger and Tremblay 2003; Ross-Thomas and Bryant 1994). In some studies, many of which are qualitative, the open or lacking definition has understandably been described by researchers as an opportunity for the functions or characteristics of mentoring to be revealed by participants, allowing the definition to be reflective or representative of their own academic experience. However, some quantitative studies have also failed to provide a lack of a clear operational definition, despite use of research designs that require a clear definition to properly examine the impact of a mentoring program or intervention on some measure of student success.

Although there has been a large amount of disagreement about what mentoring is and what characteristics it entails, Jacobi's (1991) review identified three ways in which researchers agree about mentoring, which largely continue to be reinforced by the literature. First, researchers have concurred that mentoring relationships are focused on the growth and accomplishment of an individual and include several forms of assistance (Chao et al. 1992; Cullen and Luna 1993; Ehrich et al. 2004; Haring 1999; Johnson and Nelson 1999). Second, there is general consensus that a mentoring experience may include broad forms of support including assistance with professional and career development (Brown et al. 1999; Campbell and Campbell 1997; Chao et al. 1992; Davidson and Foster-Johnson 2001; Kram 1985), role modeling (Brown et al. 1999), and psychological support (Chao et al. 1992; Cullen and Luna 1993; Davidson and Foster-Johnson 2001; Green and Bauer 1995; Kram and Isabella 1985; Levinson et al. 1978).

Many researchers since Jacobi (1991) have agreed that these broad forms of assistance should include planned activities with a faculty member (e.g., Bernier et al. 2005; Campbell and Campbell 1997; Collier and Morgan 2006; Ishiyama 2007; Kahveci et al. 2006; Salintri 2005). However, beyond this, there has been little agreement regarding the specific activities that should be included in providing these broad forms of support to students. For instance, Collier and Morgan (2006) have provided mentoring activities such as access to peer mentoring videos, weekly college adjustment tips and participation in quarterly discussion groups, while Ishiyama (2007) provided support to students in the form of participation in undergraduate research, and Pagan and Edwards-Wilson's (2003) mentoring activities were limited to two or more meetings and telephone conversations with a faculty member and letters from the program office.

Third, there continues to be agreement within the literature that mentoring relationships are personal and reciprocal (Davidson and Foster-Johnson 2001; Green and Bauer 1995; Kram and Isabella 1985; Healy and Welchert 1990; Hunt and Michael 1983; Johnson 1996; Johnson and Nelson 1999). However, the availability of technology, namely the internet, may be changing the ways in which mentoring relationships are personal, as researchers since Jacobi (1991) have begun to include an internet or video component as part of the students' mentoring activities (e.g., Carlson and Single 2000; Collier and Morgan 2006; Edwards and Gordon 2006).

It is important to note that within the mentoring literature, the role of mentor has not always been limited to faculty as many of the core functions of mentoring have been shown to be provided by college and university staff, senior or graduate students, peers, friends, religious leaders and/or family (Kram and Isabella 1985; Zalaquett and Lopez 2006). For instance, Philip and Hendry (2000) have identified five types of naturally occurring mentoring relationships adolescents and young adults may experience including: classic

mentoring (one-on-one relationship between experienced adult and a younger person, similar to an apprentice), individual-team (young group of people look to an individual or a few individuals for advice), friend-to-friend (provides a safety net, common among women friends), peer-group (among a group of friends, often when exploring an issue), and long-term relationships with “risk taking” adults (similar to classic mentoring, but the person being mentored has a history of rebellion).

The idea that mentoring relationships progress through a series of stages has been empirically studied within the context of business relationships. The most comprehensive study to date (i.e., Kram 1983) proposed a model outlining four phases of mentoring relationships based on interviews with 18 pairs of mentors and mentees from a single company. Results of Kram’s (1983) study, limited in terms of external validity and possible relevance to students, indicate mentoring relationships naturally progress through a series of four stages. The first stage of mentoring, the initiation stage, lasts between 6 and a year. As the title implies, the initiation stage is seen as the time a relationship between the mentor and mentee started. The next stage, which lasts between 2 and 5 years, is termed the cultivation stage. This stage is defined as the time in which the range of mentoring functions expands. Separation, the third stage of mentoring, is characterized by psychological or structural changes in the organizational context. This period disrupts the cultivation stage whereby the established relationship between mentor and mentee is altered and the mentee gains independence. The fourth and final stage of mentoring, redefinition, is when the relationship evolves into a new, significantly different relationship, or the stage in which the relationship ends (Kram 1983).

Research has shown that mentoring relationships may be informal or formal, long-term or short-lived, planned or spontaneous (Luna and Cullen 1995). Informal mentoring relationships have been shown to be not structured, managed, or formally recognized by the institution (Chao et al. 1992). Informal relationships typically develop “naturally,” involve the mentor and protégé seeking each other out, and are typically focused on long-term goals (Campbell and Campbell 1997). In contrast, formal mentoring relationships have been shown to be managed and sanctioned by industry or an educational institution (Chao et al. 1992). Formal mentoring relationships typically have a third party who matches the mentor with the mentee. The duration of informal and formal mentoring relationships has been shown to vary. While some mentoring relationships may be as short as one meeting (Phillips-Jones 1982), others last 6 months or a year (Kram and Isabella 1985), or even an entire decade (Levinson et al. 1978).

Empirical Studies Centered on Mentoring College Students

The following section provides a synthesis and critical analysis of empirical studies conducted between 1990 and 2007 specific to mentoring college students, revealing a growing number of disconnected studies, all loosely aligned with the concept of mentoring.

Student Populations of Interest

The focus of the large majority of the empirical investigations reviewed herein (69%) centered on mentoring undergraduate students (e.g., Atkins and Williams 1995; Carlson and Single 2000; Freeman 1999; Rodger and Tremblay 2003; Strayhorn and Terrell 2007) while roughly a third of studies have provided evidence to support the impact of mentoring graduate students (e.g., Bowman and Bowman 1990; Fiason 1996; Hadjioannou et al. 2007), and only one study broadly studied both student populations (Lloyd and Bristol

2006). Two of the 42 reviewed studies were novel in attempting to understand mentoring through the lens of the mentor including Carlson and Single (2000) who presented quantitative and qualitative mentoring outcomes, as reported by both students and mentors, and Reddick (2006) who studied the mentoring relationships of African American students at predominantly White institutions through the lens of four African American professors using a grounded theory approach.

Although there is much work to be done, a significant improvement in the literature in recent years has been made by a broader attempt to investigate the impact of mentoring on different types of students including women, minorities, first generation college students, and “at risk” students (e.g., Bernier et al. 2005; Bordes and Arredondo 2005; Campbell and Campbell 1997; Fiason 1996; Ishiyama 2007; Kador and Lewis 2007; Morgan and Collier 2006; Quinn et al. 2002; Santos and Reigadas 2005; Zalaquett and Lopez 2006). Most significantly, the work of Lark and Croteau (1998) has revealed the perceptions of mentoring as viewed by gay, lesbian, and bisexual students. The mentoring literature has also expanded over the past decade to include studies centered on examining the characteristics, roles, and outcomes of mentoring specific student populations such as students taking online courses (Edwards and Gordon 2006; Melrose 2006), athletic students (Pitney and Ehlers 2004), medical and nursing students (Aagaard and Hauer 2003; Atkins and Williams 1995; Hauer et al. 2005; Lloyd and Bristol 2006; Melrose 2006; Watson 1999) and students in specific majors such as engineering and science (e.g., Friarson 1996).

It is noteworthy that nearly all of the mentoring studies to date have been conducted at 4-year institutions. Community colleges, for-profits, and technical colleges have been almost completely excluded from study (Crisp 2009). Although researchers have attempted to investigate the effects of mentoring on different student populations attending 4-year institutions, it is also not clear whether the results of studies utilizing minority, low-income, or “at risk” students are generalizable to other 4-year students. The potential generalizability of results for students attending 2-year, technical or for-profit institutions is even more questionable.

Focus/Methodology

Of the 19 reviewed quantitative studies, the majority utilized non-experimental methods (e.g., Bernier 2005; Fiason 1996; Lloyd and Bristol 2006; Neumark and Gardecki 1997; Paglis et al. 2006; Strayhorn and Terrell 2007) while only a handful of studies used an experimental or quasi-experimental design (Campbell and Campbell 1997; Kahveci et al. 2006; Rodger and Tremblay 2003; Salinitri 2005; Sorrentino 2007). Unfortunately, the majority of quantitative studies have been fraught with one or more methodological concerns including a lack of an operational definition of mentoring specific enough to allow for replication (e.g., Friarson 1996; Kahveci et al. 2006; Neumark and Gardecki 1997; Rodger and Tremblay 2003), and/or a failure to test and/or report the validity and reliability of survey items (Aagaard and Hauer 2003; Friarson 1996; Salinitri 2005). Moreover, many of the reviewed quantitative studies could be considered methodologically weak due to a reliance of self-reported benefits of mentoring as outcome measures (e.g., Bordes and Arredondo 2005; Luna and Cullen 1995; Strayhorn and Terrell 2007), use of cross-sectional data collected at one point in time (e.g., Aagaard and Hauer 2003; Luna and Cullen 1995; Quinn et al. 2002; Sorrentino 2007), over-reliance of descriptive methods as the main analysis (e.g., Aagaard and Hauer 2003; Luna and Cullen 1995; Quinn et al. 2002; Wilson et al. 2006), and/or failure to utilize a comparison group to assess programmatic effects (e.g., Carlson and Single 2000; Crawford et al. 1996; Quinn et al. 2002).

Furthermore, many of the reviewed quantitative studies neglected to demonstrate if and how their sample was representative of their study population (e.g., Mangold et al. 2003; Pagan and Edwards-Wilson 2003; Rodger and Tremblay 2003). Of even greater concern is an absence of theory guiding the data collection and analysis of a large number of quantitative studies (Campbell and Campbell 1997; Friarson 1996; Kahveci et al. 2006; Lloyd and Bristol 2006; Mangold et al. 2003; Neumark and Gardecki 1997; Pagan and Edwards-Wilson 2003; Rodger and Tremblay 2003; Ross-Thomas and Bryant 1994; Sorrentino 2007). Furthermore, as previously noted by Jacobi (1991), the majority of the quantitative mentoring research to date has failed to examine the degree to which findings are externally valid beyond the extremely narrow, often departmental or institutional samples (e.g., Aagaard and Hauer 2003; Anagnopoulos 2006; Bernier et al. 2005; Crawford et al. 1996; Sorrentino 2007).

Methodological integrity within existing quantitative studies is therefore worthy of mention, including studies conducted by Paglis et al. (2006); Santos and Reigadas (2005), and Campbell and Campbell (1997). Utilizing Kram's (1983, 1985, 1988) organizational framework and controlling for student attitude and ability, Paglis et al. (2006) conducted a longitudinal study to test the effects of mentoring on productivity in graduate research, commitment to a research career, and self-efficacy. Participants included entering doctoral students from the fields of chemistry, physics and engineering at a Midwestern university. Results of the regression analysis indicated that mentoring was related to subsequent productivity and the self-efficacy of doctoral students. However, mentoring was not found to be significantly related to students' commitment to a research career ($p < .05$). Only 36% of the original participants were retained to the end of the study, limiting the external validity of the study results. Furthermore, there was no way of knowing if students had received mentoring from another source, if students experienced underlying personal issues, or if the research skills of the mentors had any effect on the participants' responses.

Although the external validity of the results may be limited due to the small sample size ($n = 65$), the work of Santos and Reigadas (2005) provides another example of a well-designed non-experimental study, which utilized path analysis to test the effects of ethnic homogeneity of at-risk students among student/mentor backgrounds and the frequency of mentor contact to several outcome variables. Results indicated a positive relationship between the ethnic homogeneity and frequency of mentoring contact. Moreover, student-mentor ethnic homogeneity had a positive influence on the perceived support received by students' mentors, satisfaction with the formalized mentoring program, adjustment to college, and academic performance.

One of the most methodologically rigorous quantitative mentoring studies to date, conducted by Campbell and Campbell (1997), utilized an experimental design to investigate the effects of mentoring on minority students' academic success, defined by a higher grade point average (GPA) and retention rates. Minority students attending a large metropolitan university were randomly assigned to two groups; a group of students who received faculty mentoring and a control group who did not. *t*-Test results indicated mentored minority students had significantly higher grade point averages and were twice as likely to persist as non-mentored minority students ($p < .001$). The frequency and duration of faculty and student contact were also analyzed with regard to student outcomes. Consistent with prior research (e.g., Astin 1977; Bank et al. 1990; Pascarella et al. 1978, 1983; Pascarella and Terenzini 1976; Spady 1971), students who had more contact with their faculty member were more academically successful. A significant positive relationship was found between faculty contact, the number of credit hours earned, and grade point average.

It should be noted, however, that due to the sample size ($n = 338$), even small correlations were found to be significant (Campbell and Campbell 1997).

The majority of reviewed qualitative studies focused on adding to our theoretical understanding of students' and/or mentors' mentoring experiences (e.g., Atkins and Williams 1995; Edwards and Gordon 2006; Hauer et al. 2005; Kador and Lewis 2007; Koro-Ljungberg and Hayes 2006; Lark and Croteau 1998; Pitney and Ehlers 2004; Reddick 2006; Wallace et al. 2000), as discussed in the following section of this article. However, we also reviewed numerous qualitative studies centered on understanding students' perceived benefits of mentoring. These studies are beneficial in adding to our understanding of how different groups of students (i.e., African American, Latino/a, low-income and first generation) perceive and experience mentoring. Methodological strength within these studies included use of prolonged time in the field (Freeman 1999) and a thorough literature review (Hadjioannou et al. 2007; Wallace et al. 2000). Moreover, many the qualitative studies demonstrated accuracy in the findings/conclusions by using rich, thick descriptions to convey findings (Lee 1999), peer debriefing (Zalaquett and Lopez 2006), or low interference descriptors (e.g., Melrose 2006; Wallace et al. 2000; Zalaquett and Lopez 2006).

However, the majority of the reviewed qualitative studies could be considered methodologically flawed in that they provided a limited description of the methods used to collect and/or analyze the data (Freeman 1999; Hadjioannou et al. 2007; Melrose 2006; Wallace et al. 2000) and/or failed to provide sufficient empirical data to back up conclusions or policy recommendations (Hadjioannou et al. 2007; Zalaquett and Lopez 2006). Of greatest concern was a lack of mention of data or method triangulation, member checking, or efforts to demonstrate data reliability within the majority of the reviewed qualitative articles.

Finally, program evaluation was a primary method of 12 of the reviewed studies (e.g., Bowman and Bowman 1990; Carlson and Single 2000; Crawford et al. 1996; Lloyd and Bristol 2006; Mangold et al. 2003; Pagan and Edwards-Wilson 2003; Quinn et al. 2002), which largely centered on programmatic issues rather than on broad forms of assistance provided to students. As such, students' mentoring experiences were presumed to include formalized conversations with faculty and/or participation in arranged events or activities with a faculty mentor. Consequently, in many cases these studies measured mentoring as contact with faculty rather than attempting to measure the outcome of a broader mentoring experience.

Mentoring Outcomes

The impact of mentoring on numerous outcome variables ranging from retention and graduation rates to comfort with the educational environment has been widely studied in recent years. Overall, findings have been positive and have indicated a positive relationship or an impact of mentoring on student persistence and/or grade point average of undergraduate students (Campbell and Campbell 1997; Freeman 1999; Kahveci et al. 2006; Mangold et al. 2003; Pagan and Edwards-Wilson 2003; Ross-Thomas and Bryant 1994; Salinitri 2005; Sorrentino 2007; Wallace et al. 2000). Moreover, Bordes and Arredondo (2005) recently found a positive relationship between first year Latina/o students' perceptions of mentoring and their comfort with the university environment ($r = .21$, $p < .025$).

Our review only identified two studies that failed to find entirely positive effects of mentoring on students including Rodger and Tremblay (2003) who found mentoring to

have a significant effect on higher grades, but not on retention rates of “mentored” traditional, first-year students attending a 4-year institution. Despite the use of a rigorous experimental design, the validity of the results in Rodger and Tremblay’s (2003) work may be questionable due to the glaring absence of an operational definition used to identify “mentored” students. Similarly, Strayhorn and Terrell (2007) found that while a meaningful, research-focused mentoring relationship had a positive relationship on African American students’ satisfaction with college, there was no significant effect on satisfaction of students who engaged in informal mentoring relationships.

Although the majority of recent studies centering on graduate students have focused on identifying the characteristics or process of mentoring, a few recent studies have attempted to assess the prevalence of mentoring relationships (e.g., Kador and Lewis 2007; Lloyd and Bristol 2006; Paglis et al. 2006), factors impacting students’ potential for mentoring (Green and Bauer 1995), and/or the impact of mentoring graduate students on outcome variables (Bowman and Bowman 1990; Hadjioannou et al. 2007; Melrose 2006; Paglis et al. 2006). Most notably, Hadjioannou et al. (2007) self-examined the high levels of stress and anxiety associated with doctoral work. By means of the narrative method, four female doctoral students used specific strategies such as observation, self-reflection, emails, and group discussions to explore the peer-mentoring relationship. As a result, the participants found that they acquired a needed socialization in professional/academic settings, participated in academic discourse, obtained skills to navigate through the doctoral program, improved academic writing; and received emotional support to alleviate the stress and anxiety that accompanies doctoral work. The findings of the study, though instrumental in providing a potential social structure to aid in student retention by providing social, emotional, and academic support, were focused on student outcomes. Once again, no operational definition of mentoring was provided.

Summary of Strengths and Limitations of Empirical Studies

In summary, while there is much work to be done, the mentoring studies conducted between 1990 and 2007 have contributed to our understanding of the positive impacts of mentoring on indicators of student success and the characteristics involved in a mentoring experience. In addition, recent qualitative work has substantially expanded our understanding of how mentoring is experienced by non-traditional college students. Moreover, while the use of experimental designs have been limited, quantitative researchers have begun to move beyond descriptive investigations, toward an understanding of the predictive validity or causal relationship between mentoring and student success, through the use of controlled experimental and non-experimental designs.

However, the present review also identifies several areas of methodological concern within the current research. Operational definitions of mentoring have been either absent, too vague, or have not been specific to the population of interest. In cases where a measurable operational definition has been provided by the researcher, definitions have largely centered on programmatic issues rather than on broad forms of assistance provided to students. Second, many of the reviewed quantitative studies have failed to control for other variables such as academic ability, grades in high school, and familial support that may influence the impact of mentoring (i.e., independent variable) on the outcome variable of interest (e.g., retention, grade point average) (e.g., Carlson and Single 2000; Crawford et al. 1996; Quinn et al. 2002). Third, the majority of reviewed qualitative studies centered on understanding students’ perceived benefits of mentoring appear to have not utilized procedures to ensure data accuracy, such as triangulation, member checking, or prolonged

time in the field (e.g., Freeman 1999; Hadjioannou et al. 2007; Melrose 2006; Wallace et al. 2000).

Forth, measurement tools used to quantify students' mentoring experiences have not been theoretically-based. Rather, much of the literature utilized homegrown surveys (e.g., Lloyd and Bristol 2006; Sorrentino 2007; Zimmerman and Danette 2007) while copies or descriptions of survey instruments have been lacking. Any connections to theory discussed by the researchers have been unclear. With the exception of Bordes and Arredondo (2005), none of the studies that have utilized survey instruments have been shown to be statistically valid in terms of construct validity or reliability. Although Bordes and Arredondo (2005) stated that their survey was previously validated in Gloria's (1993) dissertation, the researchers neglected to demonstrate construct validity of the survey instrument within the context of their study population.

Conceptualizing Mentoring

Despite the dominance of atheoretical studies, several attempts have recently been made to develop and test theory that explains the roles, characteristics, and functions involved in a mentoring experience from psychology, business, and educational perspectives. The most comprehensive of which has been conducted by Roberts (2000) who used phenomenological reduction to conceptualize mentoring. Drawing from a review of research articles in a variety of fields published between 1978 and 1999, Roberts found that mentoring involves several *essential* attributes including the existence of an underlying helping, teaching-learning, reflecting, career-development and formalized process, a supportive relationship, and a role constructed by or for a mentor. Additionally, Roberts (2000) identified several *contingent* mentoring attributes including coaching, sponsoring, and role modeling.

Mentoring was defined by Roberts (2000) as "a formalized process whereby a more knowledgeable and experienced person actuates a supportive role of overseeing and encouraging reflection and learning within a less experienced and knowledgeable person, so as to facilitate that persons' career and personal development" (p. 162). Although the depth and complexity of Robert's analyses is worthy of note, the proposed theoretical perspective was limited by the researcher's refusal to objectively summarize his findings and his lack of ability to derive alternative meaning from basic concepts. The substantive limitations in Robert's work therefore require an individual examination and analysis of the major theoretical perspectives of mentoring provided both outside and inside academia.

Mentoring from a Developmental Psychology Perspective

Although the generalizability of findings is limited because their interviews only included men, psychologists Levinson et al. (1978) have been credited for popularizing the mentoring concept within the field of psychology, identifying a mentor as an older, senior male who is seen by the protégé as an older brother. Levinson et al. (1978) propose that mentors serve several functions including teacher, sponsor, host or guide, exemplar to admire and emulate, and a counselor who gives moral support. In addition, Levinson et al. (1978) propose that the most important role of the mentor was to support and facilitate the realization of the protégé's dream. Although the theoretical perspectives provided by Levinson et al. have been cited in numerous mentoring pieces from multiple disciplines (e.g., Anderson and Shannon 1988; Ehrich et al. 2004; Hunt and Michael 1983; Johnson

and Nelson 1999; Knox and McGovern 1988; Merriam 1983; Ragins and Cotton 1999; Rose 2003; Schockett and Haring-Hidore 1985), there has been no attempt to validate their theory in its original form using a diverse, representative population (e.g., women, college students).

In an attempt to integrate and clarify the mentoring literature, psychologists Schockett et al. (1983) have identified a mentoring model containing eight mentoring functions, four psychosocial and four vocational. The four psychosocial functions included role modeling, encouraging, counseling, and moving from a perspective as to one of friend while the four vocational functions identified include educating, consulting, sponsoring, and protecting. The mentoring model developed by Schockett et al. (1983) was tested 2 years later in a study involving 152 participants who were asked to rate on a scale of one to seven the desirability of mentoring activities described in four vignettes (Schockett and Haring-Hidore 1985). Each vignette was approximately 50 words and incorporated quotes from the mentoring literature. Results of the factor analysis identified two reliable factors supporting the proposed model, psychosocial and vocational.

Mentoring from the Business Perspective

Kram's work has provided the most detailed and systematic theoretical framework on mentoring within business literature (Noe 1988) through a theoretical framework developed from both her prior work (Kram 1983; Kram and Isabella 1985) and the limited number of investigations involving mentoring in business (Phillips-Jones 1982; Shapiro et al. 1978; Clawson 1979). Kram (1988) has proposed mentoring relationships to be comprised of two major functions, career and psychosocial. The career functions were found to be dependent on the mentor's position and political power within the organization while the psychosocial functions relied more on the quality of the relationship between the mentor and the protégé.

Research validating the existence of two mentoring functions has been substantiated within the context of industry (Chao et al. 1992; Ragins and Cotton 1999), K-12 educators seeking administrative positions such as vice-principal or superintendent (Noe 1988), and women faculty in higher education (Cullen and Luna 1993). The work of Green and Bauer (1995) was the only reviewed study that has tested the validity of a career and psychosocial mentoring function (as measured by survey items developed by Noe 1988) from the perspectives of college students. Results of the factor analysis did not support the validity of a career and psychosocial latent variable, suggesting that college students may conceptualize mentoring differently than persons in industry or educational leadership positions.

Mentoring from an Academic Perspective

Mentoring in higher education was first studied in 1911 by engineering faculty at the University of Michigan (Johnson 1989). However, it was not until 1988 that an attempt was made to identify the roles and functions involved in a mentoring experience and how these experiences are perceived by students within the education literature. Developed from review of the literature from business, psychology, and education, Anderson and Shannon (1988) proposed a concept of mentoring, thought to be specific to K-12 teachers. The researchers hypothesized mentoring to be intentional, a nurturing and insightful process, protective and supportive, and to involve an aspect of role modeling. In addition, several elements of mentoring were hypothesized to include the process of nurturing, a mentor

serving as a role model, a focus on professional and/or personal development, and a long-term relationship.

Fortunately, between 1990 and 2007, numerous attempts have been made to conceptualize mentoring within the context of higher education students (e.g., Aagaard and Hauer 2003; Atkins and Williams 1995; Cohen 1995; Edwards and Gordon 2006; Miller 2002). The strength of these theoretical studies lie in the diversity of perspectives obtained and in the apparent overlap and commonality of themes identified. The limitation however, is that, with the exception of Cohen (1995), there has been little quantitative theoretical work conducted that would allow for testing the external validity of findings using broad student populations (e.g., 4-year undergraduate students).

Atkins and Williams (1995) recently sought to understand registered nurses' perceptions of mentoring undergraduate nursing students in England. An analysis of semi-structured interviews with twelve nurses, revealed six themes: support for students through empathy, encouragement, and positive reinforcement; facilitation of learning through negotiating learning experiences and serving as a role model; students' critical analysis of their own practice through reflection; managing conflicting roles and responsibilities due to the extra work generated as a result of mentoring; support from colleagues through activities such as support groups; and working in partnerships with students using significant mentoring activities.

Similarly, Watson (1999) interviewed 35 pre-registration nursing students and 15 staff (mentors) in an attempt to understand what is meant by the term mentoring within the context of a theory/practice nursing module. Content analysis revealed that all students understood the role of mentor to include assessor, facilitator, role model, planning and clinical support while staff understood their role to include assessor, facilitator, role model, and support. Unfortunately, little to no description of these roles was provided, and so it is unclear how these roles were perceived by students and staff.

Characteristics and roles of mentoring have also recently been examined from the perspectives of medical students. For instance, focus group results analyzed by Hauer et al. (2005) indicated that medical students conceptualized mentoring as interpersonal dynamics involving support, trust, a personal connection (i.e., friendship and appreciation of students' abilities), career development (i.e., supporting interests while remaining open-minded and helping to achieve a vision), and student empowerment, as seen as a means to successful mentoring. In a similar study, Aagaard and Hauer (2003) found that medical students perceived several key mentoring functions including personal-support, career-advising, serving as a role model, research and non-research opportunities and collaboration, and resources such as office space. Functions within personal support involved the mentor motivating and providing mental support and personal advice to students while career-advising functions included assisting medical students with their specialty, choice of residency, and providing opportunities for career advancement.

Utilizing a broader student population, Ishiyama (2007) examined how first-generation, low-income, and/or African American students perceived a formal research-based mentoring relationship. Participants were asked about their perceptions of a mentor's role, to describe the benefits of a mentoring relationship, and to describe what they felt was a "good" mentoring relationship. Results were coded into three reliable latent variables, career support, research/academic support, and personal consideration. Career support involved helping students find opportunities, giving advice, and standing up on his or her behalf. Research and academic support was comprised of providing students with guidance related to finding literature, research techniques, and selecting a research topic while

listening to students' personal concerns and being a good listener were components of personal consideration (Ishiyama 2007).

Attempts to conceptualize mentoring at the graduate student level have also been made by Fiason (1996) and Edwards and Gordon (2006). Fiason (1996) examined mentoring roles, which were perceived to contribute to the success of mentoring relationships between African American graduate students attending a predominantly White university. Guided by a constructivist paradigm, data revealed that graduate students conceptualized mentoring as being comprised of several roles including academic, facilitative, professional development, career, and personal support. Edwards and Gordon (2006) interviewed faculty, doctoral students, and alumni in an attempt to understand the characteristics of successful mentoring of online graduate students. Similar to Fiason's findings, Edwards and Gordon (2006) found that mentors and student both perceived online mentoring relationships to involve academic and social-emotional interactions. In contrast, Edwards and Gordon (2006) also found beneficial personal attributes, relationship prerequisites, and communication to have also enhanced the mentoring relationships of online doctoral students.

As previously mentioned, Lark and Croteau (1998) investigated the perceptions of mentoring through the views of gay, lesbian, and bisexual doctoral students enrolled in a counseling psychology program. A grounded theory approach revealed three themes, one of which was specific to the functions of mentoring relationships. Within this theme, gay, lesbian, and bisexual students described two major mentoring functions: professional and interpersonal. The professional function included activities such as conducting research, attending professional meetings, and teaching while the interpersonal function involved providing emotional support in dealing with both personal and career concerns.

Miller (2002) explored the concept of mentoring from an examination of programmatic objectives within mentoring programs and a review of the education literature. Findings indicated that mentoring behaviors included several themes including befriending, counseling, coaching, and tutoring. Befriending occurred when volunteers agreed to provide support to another person. Counseling involved listening, identifying problems and encouraging. Coaching differed from mentoring in that it was directive. Tutoring, as the name implies, involved the mentor employing tutoring skills. Tutoring was thought to be different from mentoring in that the focus of tutoring was on subject learning whereas the focus of mentoring was on life learning.

In addition, Miller (2002) identified several broad aims of student mentoring from an examination of programmatic objectives and a review of the literature: developmental, work related, and subject. Developmental aims involved personal and social development such as social skills, self-esteem, and motivation. Objectives of the developmental aim focused on several aspects: self-esteem, personal and social skills (building self-confidence), motivation, maturation (transition from one phase to another), and attitudinal change (change negative to positive), and behavior change (change negative to positive). The next aim of mentoring was work-related involving career progression and management. Objectives of this aim included aspirational (broadened horizons) and employability (develop knowledge valued by employers). The third aim of mentoring was subject, including knowledge relevant to the protégé's field as well as study skills. The objectives of subject included vocational, academic, and learning-skills. Regrettably, Miller (2002) did not mention any attempt to empirically test whether the proposed theoretical framework accurately explains the components that comprise a students' mentoring experience.

One of the most comprehensive theoretical perspectives concerning mentoring students has been proposed by Cohen (1995) who defined mentoring as a deliberate effort to

provide support to minority students, both formally and informally through frequent contact and interactions with mentors. From a synthesis of mentoring behaviors in the educational literature, Cohen theorized that six dimensions comprised students' perceptions of the mentoring concept including the relationship, information and confrontive perspectives, the mentor as facilitator, "mentor model" and student vision dimension.

Attempts to validate Cohen's (1995) six mentoring dimensions have been made by Lightfoot (2000), Smith (2004), and Rogers et al. (2005). Within the context of mentoring community college students, Lightfoot's (2000) work failed to validate Cohen's (1995) proposed mentoring dimensions. However, her work did support the existence of three reliable latent variables (educational/career goal-setting and appraisal, emotional and psychological support, academic subject knowledge support aimed at advancing a student's knowledge relevant to their chosen field) comprised of elements of Cohen's (1995) six dimensions. In contrast, Smith (2004) attempted to validate Cohen's (1995) components of mentoring within the context of K-12 principals. Smith's (2004) results have provided additional evidence that mentoring might be experienced differently for different groups, finding White, African American, and Hispanic principals each conceptualized mentoring differently. Similar to Lightfoot (2000), findings failed to support the validity of the existence of six mentoring dimensions theorized by Cohen (1995). Most recently, Rogers et al. (2005) tested Cohen's (1995) model among medical school faculty. Once again, the validity of Cohen's six-dimension factor structure was not supported.

Summary of Theoretically-Based Studies

While theoretically-based studies have tended to identify similar components or aspects of mentoring support (i.e., career, psychological support), researchers have yet to identify an externally and theoretically valid model of mentoring. Although several attempts have recently been made to conceptualize mentoring within the context of higher education students, the majority of work to date has been primarily qualitative and exploratory in nature, rather than confirmatory and verificative. As such, the external validity of the proposed theories has yet to be properly examined. A theoretically valid conceptualization of mentoring is therefore needed to understand what mentoring is and how it is experienced by a broader population of college students.

Proposed Theoretical/Conceptual Framework

Despite the absence of a comprehensive theory, four major domains or latent variables comprising the mentoring concept were identified by Nora and Crisp (2007) and recently validated using a community college population (Crisp 2009) as well as for undergraduate students attending a Hispanic Serving Institution (Crisp 2008). The four latent construct include: (1) *psychological and emotional support*, (2) *support for setting goals and choosing a career path*, (3) *academic subject knowledge support aimed at advancing a student's knowledge relevant to their chosen field*, and (4) *specification of a role model*.

As previously described by Nora and Crisp (2007), Crisp (2009) and Crisp (2008), the first latent variable, *psychological and emotional support*, draws from the theoretical perspectives of Cohen (1995), Kram (1988), Schockett and Haring-Hidore (1985), Levinson et al. (1978), Miller (2002) and Roberts (2000). In sum, psychological and emotional support involves a sense of listening, providing moral support, identifying problems and providing encouragement, and establishing a supportive relationship in

which there is mutual understanding and linking between the student and the mentor. Several theoretical components are seen as comprising this first latent variable including Kram's (1988) view that a mentoring experience incorporates feedback from the mentor regarding certain fears and other issues on the part of the student.

Similarly, Schockett and Haring-Hidore's (1985) provision that mentoring involves a discussion of fears and uncertainties as well as their emphasis on building a mentee's (student's) self-confidence is also included within this domain. Levinson's et al. (1978) stipulation that mentoring encompasses moral support, and Miller's (2002) specification that listening, identification of problems, and encouragement are a part of a mentoring experience comprise yet another aspect of psychological and emotional support. Moreover, this first dimension of mentoring takes into account active, empathetic listening and a genuine understanding and acceptance of the mentee's feelings (Cohen 1995), the development of a positive regard conveyed by another (Kram 1988), a concept of budding (Miller 2002), and a strong and supportive relationship (Roberts 2000).

The second domain, *goal setting and career paths*, represents the underlying idea that mentoring includes an assessment of the student's strengths, weaknesses, and abilities and assistance with setting academic as well as career goals. Six perspectives provide the main focus of this domain including an in-depth review and exploration of interests, abilities, ideas and beliefs (Cohen 1995). The stimulation of critical thinking with regard to envisioning the future and developing personal and professional potential, identified by Cohen, is the second area of this domain. Third, the idea that mentoring is a reflective process (Roberts 2000) is acknowledged. Requesting detailed information from and offering specific suggestions to mentees regarding their current plans and progress in achieving personal, educational and career goals (Cohen 1995) is yet another perspective comprising the second domain. Fifth, a respectful challenge of explanations for specific decisions or avoidance of decisions and actions relevant to developing as an adult learner, also proposed by Cohen, is included as a focus of this domain. Finally, facilitation in the realization of the mentee's dream (Levinson et al. 1978) is incorporated within degree and career support.

The third latent variable, *academic subject knowledge support*, centers on advancing student's knowledge relevant to their chosen field. A review of the literature identified two major components or aspects within this domain. First, this latent variable represents the idea that a mentoring experience involves providing students with someone who supports their academic success inside the classroom. Theoretical components comprising this aspect include the acquisition of necessary skills and knowledge (Kram 1988), and educating, evaluating, and challenging the mentee academically (Schockett and Haring-Hidore 1985). Additionally, focus is paid to employing tutoring skills and focusing on subject learning in contrast to mentoring that focuses on life learning (Miller 2002) and on establishing a teaching-learning process (Roberts 2000).

The second aspect of the third domain involves the mentor supporting student's academic success outside the classroom. Kram's (1988) emphasis on actively nominating the mentee for promotions, taking credit and blame, and intervening for the mentee when necessary is the first theoretical perspective incorporated within the second aspect of the academic subject knowledge support domain. Similarly, discussing the mentee's accomplishments with others, nominating them for positions, providing visibility and taking the blame for mentee, shielding him or her from negative publicity (Schockett and Haring-Hidore 1985) are additional aspects thought to comprise this domain. Finally, the idea that a mentor serves as a sponsor while also providing support toward the realization of the

mentee's dream (Levinson et al. 1978) completes the theoretical notions within the third domain.

Finally, the fourth domain, *the existence of a role model*, concentrates on the ability of the mentee to learn from the mentor's present and past actions as well as his or her achievements and failures. In this dimension, emphasis is placed on sharing, or self-disclosing life experiences and feelings by the mentor to personalize and enrich the relationship between himself/herself and the mentee (or student) (Cohen 1995; Kram 1988). Additionally, the perspective that the mentor serves as an exemplar and a guide to a new social world, provided by Levinson et al. (1978), is incorporated within this domain. The opportunity to observe the mentor with other leaders or managers, handle conflict, and balance professional and personal demands (Schockett and Haring-Hidore 1985) is the final focus of the fourth latent variable.

Recommendations for Future Research and Practice

Although nearly 50 mentoring studies have been published in the past 16 years, little has been done to address the major concerns raised by Jacobi (1991) including a failure of program development to keep pace with the theoretical or empirical research and a lack of clarity and precision of the concept of mentoring within the context of college students. We offer the following recommendations to advance the mentoring literature, coupled with several implications for practice.

Recommendations for Research and Practice

As previously identified by Dickey (1996), Johnson (1989), Miller (2002), Rodriguez (1995), and most recently by Zimmerman and Danette (2007), there is a need for a clear definition of mentoring within the literature. However, the present article reveals that the inconsistency in how mentoring is defined and subsequently measured may be a symptom of a larger area of concern—a lack of theory guiding the majority of the mentoring research. Many programmatic efforts lack a firm conceptual and theoretical base (Haring 1999). Moreover, educational researchers continue to call for mentoring research that is theoretically based and that focuses on construct and measurement development (e.g., Paglis et al. 2006; Rayle et al. 2006).

As such, we are hopeful that additional validation of the above-mentioned, as well as alternative, theoretical frameworks will advance the literature in the coming years. It is critical that researchers continue to add to our theoretical understanding by continuing to unpack the ways in which mentoring is personally experienced and constructed by students (Wallace et al. 2000) including students with different perspectives and backgrounds such as African American, Hispanic, and international students (Bordes and Arredondo 2005; Freeman 1999; Lee 1999; Mortenson 2006; Strayhorn and Terrell 2007; Zalaquett and Lopez 2006). Moreover, mentoring theory should be expanded to include the underpinnings of critical race and feminist theories in an effort to better understand how women or minorities may perceive and experience mentoring differently than men (Humble et al. 2006; Rayle et al. 2006; Rose 2003). Theoretical work should also continue to draw from other relevant fields such as psychology and business (Langer 2001).

Findings of the present review highlight the need to better understand the specific programmatic activities and characteristics that should be included in a theoretically-based, comprehensive mentoring experience. Following the recommendation of Wallace et al.

(2000), future studies should focus on testing the impact of a broad range of perspectives and educationally meaningful mentoring activities provided to students such as participating in off-campus experiences or working with a mentor on research (Strayhorn and Terrell 2007). Moreover, research should continue to test the impact of specific characteristics influencing the nature of mentoring relationships such as the length of time spent with a mentor and student/mentor characteristics (Strayhorn and Terrell 2007). Additional data are also needed to understand the differential impact of various mentoring activities and experiences on different groups of students. In other words, future research should attempt to examine whether certain mentoring functions/characteristics might compensate for the lack another mentoring function (Green and Bauer 1995).

Beyond a solid theoretical understanding of how mentoring is perceived by different groups of students and the major components and characteristics involved in a mentoring experience, methodological rigorous studies are needed to test the impact of a conceptually valid mentoring experience on various student outcomes of interest. Future research should continue to move beyond the use of small, narrow samples, and examine the extent to which findings are externally valid and can be generalized to broad student populations including different types of 2 and 4-year public and private institutions, and university types previously understudied (e.g., Hispanic Serving Institutions). There is also a need for longitudinal studies that build in appropriate controls to test the predictive validity of mentoring (Paglis et al. 2006). Researchers and practitioners should be mindful of the mediating effects and/or potentially extraneous variables (e.g., institutional type, school climate, student and mentor attitudes, characteristics of students and mentors) that may influence the impact of mentoring on student success (Green and Bauer 1995; Santos and Reigadas 2005). As such, although randomized experimental studies may be difficult or impossible, researchers are encouraged to control for extraneous variables through use of control groups, matched controls, or by building potentially extraneous variables into the study design. Moreover, researchers should be aware that factors that influence student satisfaction, attitudes, or beliefs might be different from those that explain or predict overt behavior (Campbell and Campbell 1997).

There is also a need to explore the role of various individuals in a students' mentoring experience. As suggested by Chao et al. (1992), individuals other than mentors may be able to provide some types of mentoring support. As such, it is possible that mentoring is not bound to a one on one relationship between a student and a faculty or staff member (Wallace et al. 2000). Expanding on the work of Bernier et al. (2005), future research is also warranted which would test the assumption that mentoring is always entirely beneficial for students. Specifically, researchers should attempt to better understand the role of variables such as the skills of the mentor, communication style, and personality on the effectiveness of a theoretically valid mentoring experience (Campbell and Campbell 1997; Green and Bauer 1995; Rose 2003).

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