

ENHANCEMENT OF MENTOR SELECTION USING THE IDEAL MENTOR SCALE

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Doctoral students seeking faculty mentors have few tools available to assist them. The Ideal Mentor Scale (IMS) is a new measure designed to help graduate students consider the qualities they as individuals most value in a potential mentor. Ph.D. students at 3 different universities ($N_s = 82, 250, 380$) contributed to the development and cross-validation of the 34-item IMS. Item frequencies indicated that 2 universal qualities were central to graduate students' definitions of a mentor: communication skills and provision of feedback. Principal factor analysis of the IMS indicated that 3 individual differences dimensions reliably underlaid graduate students' importance ratings of mentor attributes: Integrity, Guidance, and Relationship. In one sample, Guidance and Relationship were significantly related to student satisfaction with their mentor. The IMS is an assessment tool that could individualize the initiation and maintenance of mentoring relationships, enhance communication, and ultimately improve the satisfaction of students with their doctoral education.

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INTRODUCTION

Of all the advice offered to current and prospective graduate students in any discipline, the suggestion to "find a mentor" usually tops the list. Mentors are perceived as invaluable assets to graduate students because of the career and psychosocial support benefits they provide (Green and Bauer, 1995; Kram, 1983; LeCluyse, Tollefson, and Borgers, 1985). Of course, a mentoring relationship is a two-way street, with mentors themselves deriving a host of possible benefits as well, from personal satisfaction to career enhancement (Busch, 1985; Jacobi, 1991). Mentoring is a potentially mutually beneficial relationship that is widely perceived to be a central aspect of graduate education (Katz and Hartnett, 1976; Luna and Cullen, 1998; Roberts and Sprague, 1995; Sprague, Roberts, and Kavussanu, 1996).

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Levinson (1978), who is credited for popularizing the topic of mentoring, described the typical mentor as a male who is older and of more senior status in the protégé's community, and is experienced by the protégé as "a responsible, admirable older sibling" (p. 99). Levinson's work energized the field and linked mentoring to adult development; however, it is dated by its male-centrism and it lacks the specificity required for empirical confirmation of the theory. The mentoring literature that emerged and expanded from Levinson's work often has been criticized for lacking a clear consensus about the definition of the term (Jacobi, 1991). Anderson and Shannon (1988) reviewed the mentoring literature dating back to Homer's *The Odyssey* and concluded that existing definitions "do not provide what we believe to be the essence of mentoring in light of its etymological and historical derivation" (p. 40). As a result, Anderson and Shannon proposed a comprehensive model of mentoring that distinguished the dispositions, roles, and functions of the mentor and identified five key functions of a mentor: teaching, sponsoring, encouraging, counseling, and befriending.¹

In addition to Anderson and Shannon's (1988) theoretical advance, recent analytical contributions to the literature have helped to clarify the construct beyond Kram's (1983) early distinction between career and psychosocial mentoring. Factor analytic evidence supports a four-factor model, although the content of the factors varies depending on the population under study and the breadth of the questionnaire under analysis (Aguilar-Gaxiola, Norris, and Carter, 1984; Sands, Parson, and Duane, 1991; Wilde and Schau, 1991). For example, Sands et al. identified four factors in their analysis of a faculty-to-faculty mentoring questionnaire: Friend, Career Guide, Information Source, and Intellectual Guide. These recent contributions to the literature indicate that mentoring is a complex multidimensional phenomenon.

The practical task of finding a mentor can also be complex, and the prospect can be intimidating—particularly for new graduate students. The literature suggests that having a mentor is not a universal experience among graduate students. Indeed, in one study, difficulty finding a mentor was cited as a "moderate to major problem" for 56% of the graduate students surveyed (Jacobi, 1991, p. 514). Other surveys have found that having a mentor while in graduate school is an experience endorsed by about half to three quarters of the respondents (Cronan-Hillix, Gensheimer, Cronan-Hillix, and Davidson, 1986; LeCluyse et al., 1985; Sands et al., 1991). Furthermore, the mentoring of graduate students may theoretically encompass a broad array of behaviors or functions, including: sponsorship, protection, challenge, providing exposure and visibility, counseling, acceptance, confirmation, and coaching (Green and Bauer, 1995). However, most mentoring relationships actually include only a subset of possible functions (Noe, 1988). Graduate students seeking mentors might wish to consider which of the aforementioned mentoring functions would be most important for their future mentor to possess.

Given the perceived importance of mentoring relationships in the lives of graduate students, the advice to find a mentor might justifiably be supplemented with a specific tool to assist in this process. The Ideal Mentor Scale (IMS), whose development is the focus of this study, is an instrument that measures students' individual preferences for their ideal mentor.

The assessment of students' preferences for mentors is important for several reasons. First, this type of assessment will raise student awareness about the type of mentoring relationship that is most desired. Clarifying one's own needs, desires, and preferences is an important first step to finding a mentor (The University of Michigan Rackham School of Graduate Studies, 1999).

Second, such an assessment could, in conjunction with a measure of the actual attributes of potential mentors, facilitate the matching of graduate students with faculty mentors. Matches resulting from a consideration of the student's needs plus the mentor's qualities or attributes would be preferable to those based exclusively on traditional criteria, such as shared academic interests. Cesa and Fraser (1989) at The University of Southern California described an exemplary model of faculty mentor evaluation. Students in the Psychology Department instituted a system of annual anonymous evaluations of faculty by students. This information was available to faculty in the form of individual and group feedback, and to students who could use the information to choose a mentor. Adding a self-assessment tool, such as the IMS, to such a system would "complete the loop" and enable fully informed mentor selection.

Third, the IMS could be used to enhance communication within existing mentor-protégé pairs. Once a dyad has formed, the completed IMS could be used to open a dialogue between the student and the new mentor, who could decide on mutual goals and expectations for the relationship. At various points in the development of the student, he or she could readminister the scale to identify any changes in his or her preferences for mentoring functions. The implications of any changes could be discussed with the current mentor. In addition, any problems that arise within the relationship could be addressed from the perspective of the IMS; that is, a problem could be the result of a mismatch between a student's ideal and actual mentor. Throughout the life of a mentoring relationship—and throughout the process of graduate school—individuals' needs vis-à-vis their mentor may change (Kram, 1983; Tinto, 1993). Therefore, it is possible that the student's best fit with a faculty mentor may change also.

Finally, routine use of the IMS could foster a general "culture of mentoring" (Johnson, 2001) within the department or program in which it is used. Johnson proposed that administrators do more to promote such a culture in their departments and programs. In a similar vein, Boyle and Boice (1998) asserted that effective mentoring "begins with institution-wide programs that coach departments in ways to systematically immerse their newcomers in support programs and provide them with a sense of connectedness" (p. 177). Although mentoring

is an expected function of college and university faculty members at institutions of higher learning, institutional support for this important function could be strengthened. A formal process of assessing the mentoring needs of graduate students, vis-à-vis the mentoring styles of faculty, would greatly enhance an academic department's efforts to develop, maintain, and ultimately improve a culture of mentoring.

Existing measures of mentoring are not appropriate to the task of identifying student preferences, either because they assess existing relationships (Aguilar-Gaxiola et al., 1984; Noe, 1988; Wilde and Schau, 1991) or because they were developed for some other population, such as faculty members (Sands et al., 1991). Measures of existing relationships would not be applicable to students who do not have mentors (which is true of most students seeking mentors), and measures of the mentoring preferences of different populations are not applicable because different populations would be expected to have different needs (Green and Bauer, 1995).

METHOD

The primary goal of this study was to create a psychometrically sound measure of the mentoring preferences of doctoral students. Such a measure assumes that there are individual differences in graduate students' preferences for different aspects of mentoring. In addition to these individual differences, there may be some aspects of mentoring about which there are few individual differences in importance. These universally valued characteristics are important to identify, but because they would be strongly endorsed by all students they would not need to be included in a scale designed to measure individual differences. For clarity of presentation, the results of this study are reported in three parts. Part one reports the process used to determine the attributes that graduate students consider central to their concepts of mentor (i.e., universal characteristics). Part two reports the procedures used to develop the IMS and in so doing, to identify the mentor attributes about which there was more variability in students' preferences (i.e., individual differences). Part three examines the relationship between these individual differences dimensions and student satisfaction with their current mentor (for those who had a mentor).

Samples

Three independent samples of doctoral students were surveyed. First, a convenience sample of 82 Ph.D. students at an eastern state university was surveyed for the pilot study. The sample was 71% female, 81% Caucasian, and 83% U.S. citizen, with a mean age of 29.5 years ($SD = 6.1$). Respondents came from 13 different departments, with the highest number of students from psychology (42%) and biology (20%). Mean duration of enrollment was 3.0 years ($SD = 2.0$).

The second sample consisted of 250 Ph.D. students at a midwestern Research I University. The sample was 51% female, 65% Caucasian, and 69% U.S. citizen, with a mean age of 30.6 years ($SD = 7.1$). Respondents came from 54 different departments, with the highest number of students from education (15%) and psychology (7%). Mean duration of enrollment was 2.3 years ($SD = 2.1$).

The third sample consisted of 380 Ph.D. students at a different Midwestern Research I University. This sample was 52% female, 67% Caucasian, and 72% U.S. citizen, with a mean age of 31.9 years ($SD = 6.9$). These respondents represented 45 departments, with education (19%) and psychology (6%) again being the most frequent. Mean duration of enrollment was 4.3 years ($SD = 2.5$).

Measure

The IMS was developed to assess graduate students' definitions of their hypothetical "ideal mentor." The scale used for the pilot survey consisted of 111 different mentor characteristics, and respondents were asked to indicate how important it would be for their ideal mentor to exhibit each characteristic. In other words, the IMS exclusively assessed the student perspective of the ideal mentor. Faculty and administrative perspectives on what constitutes an ideal mentor may be different. Ratings were made on a 5-point scale, from not at all important (1) to extremely important (5).

The item pool from which the 111 items were drawn was built in stages, as indicated in Table 1. The original item pool consisted of 50 items that were written specifically to represent Anderson and Shannon's (1988) five functions of mentoring: teaching, sponsoring, encouraging, counseling, and befriending. Anderson and Shannon's model was used as the starting point because it was the clearest and most specific articulation found of the definition of mentoring.

Content validity of the original 50 items was evaluated by volunteers with specific knowledge of graduate education and/or mentoring. These individuals included three faculty² and five current or former graduate students who were

TABLE 1. Number of Items Comprising the Ideal Mentor Scale at Each Phase of Its Construction

Phase of Construction	Number of Items
Content validation	50
Focus group	135
Pilot (Sample 1)	111
Sample 2	103
Sample 3	76
Final	34

known to the author but otherwise uninvolved with the project described here. The content validators classified each item according to written descriptions of the five functions of mentoring explicated in Anderson and Shannon's (1988) theory. Eleven items with less than 87% agreement (as indicated by kappa coefficients) were revised to improve their representation of the intended function.

In the next phase of construction, input was solicited from two structured graduate student focus groups, following the recommendations of Morgan (1997; details available from the author). As a result of input obtained from the first focus group, the range of content of the IMS was expanded by adding 85 items that reflected other descriptions of mentoring found in the literature as well as the following personal characteristics of mentors: demographics, professional conduct, personality attributes, and relationship qualities. After the second focus group of different graduate students at a different university, the range of content was contracted somewhat by eliminating 24 of the 135 items that were redundant or inappropriate to the topic. The version of the IMS used for the final two administrations consisted of a subset of the 111 items from the pilot survey instrument. The IMS was administered sequentially to these last two samples, with revisions made to the scale between each administration.

Selection of items for inclusion or exclusion from the scale was determined via an iterative rational-statistical process. Beginning with the pilot study administration, each round of data collection was followed by examination of item statistics and readministration of the scale to a new sample. Items with good statistical properties were retained for the next round of data collection; items with poor statistical properties were candidates for deletion. Specifically, the IMS used in the second sample ($N = 250$) contained 103 items. Eight of the original 111 items had been deleted after an examination of missing data, item-total correlation, item distributions, and internal consistency. The IMS used in the third sample ($N = 380$) contained 76 items. Twenty-seven of the 103 items from the previous administration had been deleted because of their performance in the factor analysis (they did not load uniquely and significantly on one factor).

One of the important early steps in developing a scale is to expand the range of item content to encompass nomologically proximal concepts (Loevinger, 1957). For this reason, the initial 50-item pool for the IMS was expanded beyond the typical domain of content represented in the literature. The broader pool included items reflecting mentor demographic characteristics, personality characteristics as defined by Costa and McCrae's (1985) five-factor model (neuroticism, extraversion, openness to experience, agreeableness, and conscientiousness), professional conduct of the mentor, and indicators of a personal relationship between the mentor and protégé. To date, the concept of mentoring has been construed as independent of personality and often has omitted content reflecting the professional conduct of the mentor. Including such content in the

item pool allowed for a clearer demarcation between what is and is not important to a doctoral student's definition of the ideal mentor.

Procedure

Data were collected by means of a mail survey. A thank you/reminder postcard was sent to all participants 10 days after the survey was mailed, and two follow-up requests were sent to nonrespondents 1 and 2 months after the original mailing. Each mailing included a copy of the IMS with instructions and some demographic questions. Pilot study participants were initially solicited via a posting to the university's graduate college Internet listserv. Additional surveys were delivered to department mailboxes at the university, with an effort made to sample diverse fields. A total of 141 pilot surveys were distributed. Of these, 82 were returned (58%).

The second administration was conducted via campus mail; the third administration was conducted via U.S. post. For the second administration, 550 of the 2,106 doctoral students enrolled at the university were randomly selected to participate. Of these, 250 students returned usable questionnaires (45% response rate). For the third administration, 800 of the 2,617 enrolled doctoral students were randomly selected to participate, and 43 of these were found to be ineligible (no longer enrolled). Of the remaining 757 students, 380 returned questionnaires (50% response rate).

RESULTS 1: DEFINING THE UNIVERSAL QUALITIES OF THE IDEAL MENTOR

The universal qualities of the ideal mentor can be defined as those qualities that almost every student agrees are central to the definition of mentor. On the IMS, these qualities were represented by those items that were rated by most students as "extremely important" to their definitions of the ideal mentor. Frequency distributions for each item were examined to determine the proportion of respondents who endorsed each response option (1 through 5). Two items had distributions in which more than 75% of respondents answered 5 in each administration: "My ideal mentor would communicate openly, clearly, and effectively" [frequency = 81.7% (pilot sample), 81.9% (second administration), 78.5 (third administration)], and "My ideal mentor would provide honest feedback (both good and bad) about my work" [frequency = 76.8% (pilot sample), 80.3% (second administration), N/A (item not included in third administration)]. All other items in all three samples had option-5 endorsement rates of less than 70%. These two items also had high negative skewness indexes in all samples (>-2.0 for both items in all samples). Item means for the "communicate" item were 4.8, 4.8, and 4.7 for the pilot, second, and third administration, respec-

tively; item means for the “feedback” item were 4.7 (pilot) and 4.7 (second administration).

DISCUSSION 1: UNIVERSAL QUALITIES

Two items were endorsed as “extremely important” to the majority of graduate students surveyed. The “feedback” item was one of the 10 items written specifically to reflect Anderson and Shannon’s (1988) teaching function of mentoring, and the “communicate” item originated from one of the focus groups and was classified *a priori* as a professional conduct item. Because of their near-universal endorsement by the graduate students surveyed, these two items represent the core features of the ideal doctoral student mentor. That is, most students would like a mentor with good communication skills who provides honest feedback about their work.

The fact that there were only two items with such strong endorsement was somewhat surprising given the generally positive tone of most items and the instructions to rate the “ideal” mentor. This finding underscores the idea that the concept of mentoring is difficult to define in a universal or comprehensive manner. Graduate students really do differ in their preferences for certain mentor qualities. These individual differences are the focus of the next section of results.

RESULTS 2: INDIVIDUAL DIFFERENCES DIMENSIONS IN GRADUATE STUDENTS’ CONCEPTUALIZATIONS OF THE IDEAL MENTOR

To identify the individual differences dimensions of mentoring, the IMS items were subjected to factor analysis. Separate exploratory factor analyses were conducted in each Research I University sample, using squared multiple correlations as communality estimates (Fruchter, 1954). The principal factor method (using SAS PROC FACTOR) was used to extract factors, which were then rotated using varimax. To determine the number of factors to retain in the final solutions, the rotated and unrotated factor patterns were examined, along with the scree plots. Interpretability was also considered (Hatcher, 1994). An item was said to load on a factor if and only if it had a factor pattern coefficient of .35 or greater, a loading of less than .35 on all other factors, and a difference of at least .10 between the primary loading and all other loadings.

To determine the replicability of the factor structure of the IMS across the two samples described above, the factor structures were compared using the subset of 76 items that were common to both administrations of the scale. The first step of this comparison was to examine the range of possible solutions in each sample, with specific concern for the eigenvalues, proportion of variance, and

number of markers for each factor. In each data set, 10 factor analyses were performed, each specifying a different number of factors (1- through 10-factor solutions). A comparison of the eigenvalues and proportion of variance for 1- through 10-factor solutions for both samples is presented in Table 2. The pattern of eigenvalues and variances is similar in both samples. As seen in the table, the eigenvalues and variances accounted for by solutions with greater than four factors are quite low in both samples. Table 3 presents a comparison of the number of markers for each factor for each sample, with sequential solutions from one to eight factors included for the purpose of illustration. As seen Table 3, the number of markers begins to drop with extraction of the fourth factor. With each successive factor extracted, the number of markers continues to drop for later factors, but remains fairly consistent for factors one through three.

A formal test of factor structure replicability was performed by correlating the factor scores generated by each solution. Because the factors did not always emerge in the same order in the two samples, matching of factors for the correlations was based on content and on maximizing overall convergence between the two sets of factor scores. The content of factors 1 through 3 was quite consistent across samples and across solutions. The one-factor solution yielded a large, general factor in each sample, which accounted for an average of 78% of the items. In solutions with more than one factor, however, factor 1 consistently reflected a humanistic expression of care and concern. Factor 2 consistently reflected practical, hands-on help, and factor 3 reflected personal relationship and personality. Beyond four factors, the content of the factors diverged markedly, so it was increasingly difficult to match factors based on content alone.

**TABLE 2. Eigenvalues (and Proportion of Common Variance)
of the First 10 Unrotated Factors in Each Sample**

Factor Number	Sample 2 (<i>N</i> = 250)	Sample 3 (<i>N</i> = 380)
1	16.07 (.36)	15.02 (.39)
2	4.84 (.11)	3.58 (.09)
3	2.70 (.06)	2.77 (.07)
4	2.56 (.06)	2.26 (.06)
5	2.03 (.05)	1.86 (.05)
6	1.68 (.04)	1.61 (.04)
7	1.61 (.04)	1.44 (.04)
8	1.41 (.03)	1.35 (.03)
9	1.24 (.03)	1.23 (.03)
10	1.17 (.03)	1.05 (.03)
Overall common variance:	44.27	38.98

TABLE 3. Number of Markers for One- to Eight-Factor Solutions^a

Number of Factors	Number of Markers for Factor Number							
	1	2	3	4	5	6	7	8
1	61							
	58							
2	46	22						
	47	15						
3	27	18	20					
	28	24	13					
4	25	16	17	14				
	22	22	13	4				
5	15	17	15	14	9			
	21	22	9	8	4			
6	17	19	14	12	7	1		
	22	19	11	7	5	3		
7	17	16	12	8	4	7	3	
	20	21	10	7	5	3	1	
8	18	14	11	8	8	4	4	4
	18	13	7	9	7	6	3	2

^aIn each cell, the top line is the number of markers in Sample 2, the second line is the number of markers in Sample 3.

Note: A marker was defined as a variable that had its highest loading ($|\geq .35|$ or greater) on a factor. All solutions greater than one factor were derived using varimax rotation.

The convergent correlations for each sample are presented in Table 4, along with the mean of the two convergent correlations for each factor.

A correlation of .90 is considered the minimum index of true convergence (Everett, 1983). Based on this criterion, only the first three factors were convergent (mean convergent correlations = .930, .979, and .927, respectively). After extraction of three factors, no subsequent factor achieved an acceptable level of convergence. As more factors were extracted, the first three factors remained convergent, or nearly so, while later factors never achieved convergence. Thus, solutions with greater than three factors were not reliable.

Because four-factor models had been supported in earlier studies (Aguilar-Gaxiola et al., 1984; Sands et al., 1991; Wilde and Schau, 1991), the lack of convergence evidence for the four-factor solution in this study was surprising. The convergence of the four-factor solution was therefore checked by creating two sets of unit-weighted scales based on the marker variables in the four-factor solution from each data set. These two sets of factor-based scales were then correlated. The correlations clearly support the conclusion of a replicable three-

TABLE 4. Cross-Sample Convergence of One- to Eight-Factor Solutions^a

Number of Factors	Number of Markers for Factor Number							
	1	2	3	4	5	6	7	8
1	.998							
	.998							
	.998							
2	.993	.977						
	.993	.987						
	.993	.992						
3	.927	.973	.917					
	.933	.985	.937					
	.930	.979	.927					
4	.887	.958	.775	.757				
	.862	.957	.810	.786				
	.875	.958	.793	.772				
5	.842	.905	.877	.743	.496			
	.806	.937	.894	.777	.484			
	.824	.921	.886	.760	.490			
6	.890	.810	.915	.782	.722	.154		
	.861	.853	.921	.821	.619	.310		
	.876	.832	.918	.802	.671	.232		
7	.920	.874	.841	.859	.799	.483	.522	
	.917	.913	.827	.858	.744	.564	.589	
	.919	.894	.834	.859	.772	.524	.556	
8	.917	.885	.853	.814	.793	.385	.452	.477
	.917	.919	.856	.811	.776	.459	.415	.507
	.917	.902	.855	.813	.785	.422	.434	.492

^aIn each cell, the top line is the correlation of factor scores from Sample 2 and Sample 3 computed in the Sample 3 data ($N = 380$), the second line is the correlation of factor scores from Sample 2 and Sample 3 computed in the Sample 2 data ($N = 250$), and the third line is the mean convergent correlation coefficient. Mean correlations of .90 or greater are shown in boldface.

factor solution. The factor-based scales for factors 1, 2, and 3 correlated about .92, .94, and .93, respectively; the factor-based scales for factor 4 correlated about .74.

Based on this convergence evidence, a three-factor solution was retained for further examination. The first factor had internal consistency (α) coefficients of .90 (sample 2) and .89 (sample 3), and mean inter-item correlations of .27 (both samples). Sample items from the first factor include: “value me as a person,” “believe in me,” and “treat me as an adult who has a right to be involved in decisions that affect me.” Factor 2 alphas = .88 and .87 in the second and third

samples, respectively. Inter-item correlations were .31 (sample 2) and .27 (sample 3). Sample items from factor 2 include: “provide information to help me understand the subject I’m researching” and “help me investigate a problem I am having with research design.” Factor 3 alphas = .81 and .79; inter-item correlations = .25 (both samples), and sample items include, “relate to me as if he/she is a responsible, admirable older sibling,” and “talk to me about his/her personal problems.”

Summary of Findings: Implications of Factor Analyses for Scale Revisions

The results of the convergence analyses provide the basis for decisionmaking about the content and structure of the final version of the IMS. Final version subscales were defined for these three factors by selecting items that, for both samples, had a factor pattern coefficient of .35 or greater on one factor and a difference of at least .10 between the primary loading and the loading on the other scales. Application of these criteria reduced the inter-correlation of the subscales, clarified the distinction between the content of the three subscales, and resulted in a 34-item unit-weighted scale with 14 items measuring “Integrity,” 10 items measuring “Guidance,” and 10 items measuring “Relationship.” The items in the final instrument are presented in Table 5 along with their loadings on the three factors averaged across both samples. The three IMS subscales were significantly intercorrelated (e.g., from sample 2 data: Integrity and Guidance, .55; Integrity and Relationship, .33; Guidance and Relationship, .29; from sample 3 data: Integrity and Guidance, .52; Integrity and Relationship, .40; Guidance and Relationship, .36). Alpha reliability coefficients for the three factor-based subscales ranged from .77 to .87 (sample 2) and from .77 to .84 (sample 3).

As stated earlier, this study was influenced substantially by Anderson and Shannon’s (1988) theoretical model. Because Anderson and Shannon’s model was theoretical and not measurement based, however, and because this study also included elements not included in their model, it must be considered still exploratory. It was unclear, for example, whether Anderson and Shannon’s five functions would emerge as separate factors, or how they might combine in a solution with fewer than five factors. With this in mind, Table 5 also presents the origins or *a priori* classifications of each of the 34 items retained in the final version of the IMS.

As seen in the table, the items derived from Anderson and Shannon’s (1988) model tended to remain in their original groupings. That is, all of the retained items that had been written to reflect the “befriend” function of mentoring loaded on the Integrity factor, along with the one retained item that had been written specifically to reflect the “encourage” function. Similarly, all of the

TABLE 5. Mean Varimax-Rotated Factor Pattern Coefficients of the Items Retained in IMS Final, Averaged Across the Two Samples

Final IMS Item	Source	Mean Factor Pattern Coefficient on		
		Integrity	Guidance	Relationship
Treat me as an adult who has a right to be involved in decisions that affect me	A&S: befriend	.67	.12	.02
Value me as a person	A&S: befriend	.60	.11	.18
Respect the intellectual property rights of others	Professional conduct	.58	.16	-.16
Believe in me	Levinson	.57	.12	.19
Recognize my potential	Levinson	.55	.19	.14
Generally try to be thoughtful and considerate	C&M: agreeableness	.54	.13	.26
Work hard to accomplish his/her goals	C&M: conscientiousness	.52	.22	.03
Accept me as a junior colleague	A&S: befriend	.52	.13	.12
Inspire me by his or her example and words	A&S: encourage	.51	.22	.25
Give proper credit to graduate students	Professional conduct	.50	.16	-.04
Be a role model	General relationship	.48	.19	.11
Advocate for my needs and interests	A&S: sponsor	.47	.25	.15
Be calm and collected in times of stress	C&M: neuroticism [R]	.44	.28	.23
Prefer to cooperate with others than compete with them	C&M: agreeableness	.39	.13	.01
Provide information to help me understand the subject matter I am researching	A&S: teach	.20	.65	.13
Help me plan a timetable for my research	A&S: sponsor	.10	.62	.07
Help me investigate a problem I am having with research design	A&S: counsel	.25	.61	.06
Help me plan the outline for a presentation of my research	A&S: sponsor	.17	.60	.17
Help me to maintain a clear focus on my research objectives	A&S: counsel	.32	.57	.07
Give me specific assignments related to my research problem	A&S: teach	.10	.51	.09
Meet with me on a regular basis	General relationship	.19	.50	.17
Be generous with time and other resources	Professional conduct	.30	.48	.29
Brainstorm solutions to a problem concerning my research project	A&S: counsel	.24	.48	-.07

TABLE 5. (Continued)

Final IMS Item	Source	Mean Factor Pattern Coefficient on		
		Integrity	Guidance	Relationship
Show me how to employ relevant research techniques	A&S: teach	.19	.48	-.09
Relate to me as if he/she is a responsible, admirable older sibling	Levinson	.05	.18	.56
Talk to me about his/her personal problems	General relationship	-.05	.02	.55
Be seldom sad and depressed	C&M: neuroticism [R]	.13	.12	.54
Be a cheerful, high-spirited person	C&M: extroversion	.18	.19	.53
Rarely feel fearful or anxious	C&M: neuroticism [R]	.23	.26	.48
Help me realize my life vision	Levinson	.21	.24	.48
Have coffee or lunch with me on occasion	General relationship	.16	-.11	.48
Be interested in speculating on the nature of the universe or the human condition	C&M: openness to experience	.03	.01	.47
Take me out for dinner and/or drink after work	General relationship	.05	-.11	.43
Keep his or her workspace neat and clean	C&M: conscientiousness	-.02	.20	.43

Note: All items began with the following stem: "My ideal mentor would. . ." IMS = Ideal Mentor Scale. A&S = Anderson and Shannon (1988); C&M = Costa and McCrae (1985). All C&M: neuroticism items were reversed to reflect absence of neuroticism. Primary loadings appear in boldface.

retained "counsel" items and all of the retained "teach" items loaded on the Guidance factor. The retained "sponsor" items were split between the first two factors. None of the Anderson and Shannon items loaded significantly on the Relationship factor.

Table 5 also shows that items representing the same NEO Personality Inventory type (Costa and McCrae, 1985) did not always load together on the same factor; they were fairly evenly split between the Integrity factor and the Relationship factor. Items written to reflect agreeableness and conscientiousness tended to load on the Integrity factor, while items reflecting extroversion, openness to experience, and non-neuroticism tended to load on the Relationship factor. Similarly, the items reflecting Levinson's (1978) definition of mentor were evenly split between Integrity and Relationship. Items written to reflect "profes-

sional conduct” loaded on Integrity, while items representing “personal relationship” loaded predominantly on the Relationship factor.

DISCUSSION 2: INDIVIDUAL DIFFERENCES

The Factor Structure of the IMS

Factor analysis of the IMS indicated that three factors—Integrity, Guidance, and Relationship—reliably underlie the broad range of content included in the remaining item pool, after the common items were removed. The Integrity subscale represented a variety of perspectives on mentoring, such as Anderson and Shannon’s (1988) befriend and encourage functions and part of Levinson’s (1978) definition. The Integrity subscale also included personality items reflecting agreeableness and conscientiousness. The underlying mentoring style represented by the Integrity subscale appears to be one that embodies respectfulness for self and others, and empowers protégés to make deliberate, conscious choices about their lives. The mentor with Integrity is one who exhibits virtue and principled action and is thus worthy of emulation as a role model.

The Guidance subscale, however, represents an aspect of mentoring not included in Levinson’s (1978) definition and seemingly independent of personality. It encompasses Anderson and Shannon’s (1988) counsel, sponsor, and teach functions, and can be conceptualized as helpfulness. It is perhaps the most straightforward interpretation of the word “mentor” in an academic setting since it represents aspects of the day-to-day work of a graduate student, such as solving research problems and planning presentations of one’s work.

The third subscale of the IMS (Relationship) primarily reflects Levinson’s (1978) traditional theory of mentoring. It also contains general relationship items and personality items reflecting extroversion, openness to experience, and absence of neuroticism. The content of this subscale is an aspect of mentoring not specifically expressed by Anderson and Shannon’s (1988) mentoring functions. Essentially, this subscale connotes a sharing of the aspects of oneself that are traditionally viewed as private or somewhat more intimate than is typically the case in student–faculty relationships: personal problems, social activities, and life vision or worldview. Furthermore, personality traits reflecting good-naturedness or fun are strongly featured in this subscale.

The three subscales of the IMS are consistent with other conceptualizations of mentoring dimensions described in the literature. For example, Burlew (1991) proposed three different types of mentors in his Multiple Mentor Model theory for human resources development. Each type corresponds to a different stage in the development of an employee within an organization. The Training Mentor is someone who helps an employee to master job skills and adjust to the work environment. In IMS terminology, this type of mentor might perform some of

the Guidance functions. The Education Mentor is someone who assists the employee with broader career development skills and decisions. Third, Burlew's Development Mentor is someone who assists the employee to self-actualize, or develop into a well-rounded individual. While Burlew's types do not display a one-to-one correspondence with the IMS subscales, there is substantial overlap.

The factor structure of the IMS is comparable to that obtained by Wilde and Schau (1991) in a study of similar design to the current project (their population consisted of graduate students identified as protégés by professors of Education). For example, Wilde and Schau's first factor Psychological and Professional Mutual Support contains item content that overlaps with the Integrity subscale of the IMS: "Professor serves as role model," "Professor values student as person," and "We value each other as colleagues." Their second factor, Comprehensiveness, taps a similar content domain as the Relationship subscale of the IMS: "Professor discusses personal dilemmas with student," "Our relationship is strictly work related" (anticipated negative), and "We socialize together." A combination of Wilde and Schau's third (Mentee Professional Development) and fourth (Research Together) factors approximates the Guidance subscale of the IMS. (From Mentee Professional Development: "Professor helps student get fellowships," and from Research Together: "Professor helps student with research," and "We present papers together.") Thus, Wilde and Schau's behavioral and relational items loaded in similar groupings to the items included in the present study. That the analysis of the IMS yielded factors similar to those reported in the literature increases confidence in the stability of these underlying mentoring styles.

The IMS may be considered an improvement on Wilde and Schau's (1991) measure because it is applicable to all graduate students, not just those who are currently in a mentoring relationship. Furthermore, the IMS was developed in a larger and more diverse sample, and the findings were cross-validated in a second large heterogeneous sample.

Strengths of the Study

Confidence in the findings of this study is enhanced by an understanding of the process by which the IMS was developed. To the extent feasible, development of the IMS was guided by Loevinger's (1957) principles for maximizing the construct validity of a scale. First, to assure substantive validity, the item pool for the IMS was assembled to reflect both the clearest articulation of mentoring available in the literature and the broader areas of content related peripherally to mentoring. To build structural validity into the IMS, item selection was based on empirical evaluation of the items in different samples. Importantly, the factor structure of the IMS was found to be highly convergent across two large Research I University graduate student samples. The three-factor solutions repli-

cated quite closely across samples, indicating that the underlying structure of the IMS is consistent in the two samples of the population for which it is intended to be used.

RESULTS 3: RELATIONSHIP BETWEEN MENTOR PREFERENCE AND SATISFACTION

What is the relationship between the level of satisfaction with one's mentor and scores on the IMS factor-based subscales? To answer this question, the subset of respondents who stated they currently have a mentor was identified (Sample 2, $n = 144$; Sample 3, $n = 252$). For these participants, responses to the satisfaction item ("If you currently have a mentor, please rate how satisfied you are with your current mentor relationship") were correlated with each of the three IMS factor-based scales. For Sample 2 and Sample 3, respectively, satisfaction correlated .10 and .09 with the Integrity factor, .18 ($p < .05$) and $-.08$ with the Guidance factor, and $-.19$ ($p < .05$) and $-.01$ with the Relationship factor.³ Correlations were nonsignificant except for the Sample 2 correlations between satisfaction and Guidance and between satisfaction and Relationship.

DISCUSSION 3: RELATIONSHIP BETWEEN MENTOR PREFERENCE AND SATISFACTION

Scores on the Guidance subscale were positively correlated with satisfaction among protégés in Sample 2. That is, protégés who most valued Guidance from an ideal mentor were those who were most satisfied with their current mentor. The fact that they were satisfied suggests that these protégés were getting what they wanted; their mentors were providing Guidance. However, satisfaction among Sample 2 protégés was inversely correlated with scores on the Relationship subscale; protégés who most valued Relationship from an ideal mentor were those who were least satisfied with their current mentor. The fact that they were dissatisfied suggests that these protégés were not getting what they wanted; that is, their mentors were not providing Relationship.

The correlations between satisfaction and scores on the IMS subscales, while modest in magnitude, are consistent with other findings reported in the literature. For example, Fielstein, Scoles, and Webb's (1992) sample reported higher satisfaction with prescriptive advising (akin to Guidance) than developmental advising (similar to Relationship). Sorenson and Kagan (1967) noted that graduate students preferred closer relationships with their faculty sponsors than the sponsors wished to have with the students. Guidance is perhaps a more universally understood function of mentoring that may be easier for most persons in a mentoring capacity to perform. The Relationship factor may represent a more controversial aspect of mentoring. Personal relationships, particularly between

opposite-sex mentor–protégé pairs, may be more difficult for mentors to navigate because others in the academic community may perceive the relationship as sexual (Burke and McKeen, 1996). Even without the complications of rumors or speculation by others, personal relationships with protégés require the mentor to possess a different set of skills than does mentoring based on practical guidance. Because Relationship mentoring involves sharing more private or intimate content, such as personal problems, social activities, and life vision or worldview, the mentor who offers this type of mentoring to protégés must maintain an awareness of appropriate emotional and ethical boundaries to avoid violating codes of conduct established by most universities. This aspect of mentoring, therefore, may be seen as making a larger investment in the student—a commitment that may seem, if not inappropriate, at least unrealistic to many busy faculty members in today’s academic climate.

The correlations between satisfaction and different types of mentoring raise questions about the ideal role of the academic mentor. The data presented here indicate the behaviors that doctoral students most desire from a mentor, but this does not necessarily mean that mentors should be doing these things. Should mentors have personal relationships (as defined by the IMS subscale so named) with their doctoral students? Or is this an unrealistic or inappropriate expectation of an academic mentor? Existing literature consistently supports the idea that a mentoring relationship includes personal closeness, as evidenced by extracurricular socialization and/or discussion of personal problems (Noe, 1988; Sands et al., 1991; Scandura and Katerberg, 1988; Scandura and Ragins, 1993; Wilde and Schau, 1991). However, because mentoring instruments have largely been created from the protégé’s perspective, it is not clear that these personal dimensions would emerge as critical to the mentor’s definition of the ideal relationship with a protégé.

GENERAL DISCUSSION

Implications for Research

Future research with the IMS should be conducted to further evaluate its predictive validity beyond the inconsistent and small relationship with student satisfaction. Measures of satisfaction and other desired outcomes of mentoring, such as greater student confidence in navigating their doctoral program and greater self-actualization, or objective measures like grade point average or graduation rate, are important indexes of the utility or function of the mentoring relationship. However, because the IMS is designed to be used with unmentored students as well, evidence of the validity of this measure cannot be based solely on assessments of the outcome of a mentoring relationship. Evaluating the validity of an instrument designed to measure students’ preferences would involve

testing theories about the expected preferences of different groups of individuals in relation to other groups of individuals. For example, women may be expected to value different attributes in a mentor than men (Gilbert, 1985). Further exploration of such group differences may shed light on the validity of the instrument.

Future research in the field of mentoring more generally could be undertaken with the goal of investigating the possibly mythical assumption that “ideal” mentors exist. Anecdotal reports support the phenomenon of “multiple mentors.” The experience of having one person who provides a comprehensive mentoring relationship appears to be relatively less common than the experience of forming relationships with several individuals, either sequentially as Burlew (1991) suggests or perhaps simultaneously, who each provide some aspect of mentoring. The holistic combination of these many relationships may be experienced in the protégé as constituting mentoring, but the various aspects of the relationship may not originate from a single person.

IMPLICATIONS FOR THEORY

The three-factor model of mentoring that was supported by this research incorporates a variety of definitions and perspectives on mentoring. Interestingly, two of the major theorists used in the development of the scale appear to be defining mentoring in fairly different ways. Levinson (1978), whose theory energized the field, appears to have emphasized the Integrity and Relationship aspects of the process over the Guidance component. Anderson and Shannon’s (1988) articulation of functions performed by a mentor emphasized Integrity and Guidance, but left out Relationship. Integrity, it would seem, is the common core of both definitions of mentoring.

Another element left out of earlier theories of mentoring is the importance of traditional measures of personality. Because personality is a major variable used to explain interpersonal attraction and the development of interpersonal relationships (Myers, 1987), it is reasonable to assume that it plays a role in one’s attraction to an ideal mentor. Indeed, personality is featured in two out of the three IMS factors supported by this research. The factors featuring personality items are the same as those featuring items from Levinson’s definition of mentoring: Integrity and Relationship, but not Guidance. Personality is clearly an important variable that graduate students consider when defining their ideal mentor, and for this reason it is relevant to the theory and definition of mentoring.

IMPLICATIONS FOR PRACTICE

The IMS has potential for further application in higher education settings. As a result of the steps that were followed to build and evaluate the psychometric properties of the IMS, it is now a theoretically grounded and structurally con-

firmed measure of doctoral students' mentor preferences that has utility for individual assessment. Graduate students could complete the IMS when enrolling in their program, or any time they are seeking a mentor, to help them clarify what they want from a mentor relationship and to help them choose from among the available options. The completed scale could be used to open a dialogue between the student and potential mentor, as there may well be differences in perspective between students and faculty or administrators. The dyad could then decide on mutual expectations for the relationship. At various points in the development of the student, he or she could readminister the scale to identify any changes in his or her preferences for mentoring functions. The implications of any changes could be discussed with the current mentor. Problems that arise within the relationship could be addressed from the perspective of the IMS; for example, a problem could be the result of a mentor-protégé mismatch or a change in the preferences or practices of either person along one of the IMS dimensions. Because of the potential for the IMS to enhance communication and relationships between graduate students and faculty, its routine use may enhance the adoption of a "culture of mentoring" at doctoral-granting institutions, which ultimately may improve the satisfaction of students with their doctoral education.

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ENDNOTES

1. Anderson and Shannon defined mentoring as, "a nurturing process in which a more skilled or more experienced person, serving as a role model, teaches, sponsors, encourages, counsels and befriends a less skilled or less experienced person for the purpose of promoting the latter's professional and/or personal development. Mentoring functions are carried out within the context of an ongoing, caring relationship between the mentor and protégé" (p. 40).
2. One of the content validators (S. Tentoni) was an expert in the field of mentoring who had utilized Anderson and Shannon's (1988) model in academic work.
3. Correlations are based on $n = 128$ in Sample 2 and $n = 232$ in Sample 3 due to missing data.

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