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REFLECTIONS OF COMMUNITY-COLLEGE STUDENTS REGARDING MENTEE/INSTRUCTOR TEACHING AND LEARNING EFFECTIVENESS

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This investigation used data collected from students who assessed their instructors' teaching and learning effectiveness. Instructors were community-college career and technical-education faculty enrolled in the Community College Induction Mentoring Program (CCIM), a jointly sponsored program between Iowa State University and the instructors' respective community colleges. These new faculty were involved in a structured mentor/mentee program in which the mentor was involved in a 1-day mentor training program. The mentor/mentee relationship was designed around annual goals with an action plan developed, executed, and assessed for each goal. One component of the mentor/mentee program involved documentation of an effectiveness plan, including students' perception of their mentored-instructors' teaching and, as a consequence, their own learning effectiveness. Students were asked to complete an evaluation instrument comparing their "reactions" and "learning" in classes taught by mentored instructors enrolled in the CCIM program relative to other nonmentored instructors. A total of 9 hypotheses provided the direction of the research. Student ratings were typically higher for new instructors who received peer mentoring. Mentees and mentors consistently reported a high level of satisfaction about their partnership. Supervisors voiced strong support for the program. This paper shares student survey results of mentee/instructor teaching and student learning effectiveness.

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It has been projected that during the next 10 years, over two-thirds of all jobs will require something more than a high school diploma but less than a bachelor's degree (United States Department of Education, 1999). These figures have significant implications for community colleges and their faculty. Under this scenario, educators are challenged to develop systems that provide workers the background they need to ensure an internationally competitive United States. Most of the current reforms targeting education call for greater professionalism in teaching; that is, higher standards for entry into the profession, greater emphasis on the scholarly foundation for practice, more rigorous programs of theoretical and practical preparation, better strategies for certification and licensure, and changes in the workplace that permit greater autonomy and teacher leadership (Lynch, 1997; McCaslin & Parks, 2002). In large measure, the reforms call for teaching to follow the model of other professions that define their knowledge in systematic terms, require extended periods of preparation, socialize neophytes into practice with extended periods of internships or residency, and employ demanding national and state certification procedures. However, few community college teachers are hired based upon teaching credentials. Rather, they are hired based upon subject or program expertise. The state departments of education licensure requirements for new career and technical education faculty in all 50 states and the District of Columbia confirm subject matter emphasis (Joerger, 2003).

RECENT HISTORY OF TEACHER PREPARATION

Reformers have different approaches to professional knowledge and skills: holistic and analytic models of thinking mingle in the debate about the technical knowledge and skills. Earlier researchers represent the holistic approach, and resist the use of task analysis to break down teaching into components that are delivered through instructional systems. Combs (1965) has long maintained a perception-oriented position that treats teaching as an organic extension of the personality of the human agent. Other researchers (Bransford, J., Brown, A. L., Cocking, R. R. (Eds.), National Research Council (U.S.), & Committee on Developments in the Science of Learning, 2000) in the 1970s and 1980s were students of effective teaching who attempted to identify sets of behavior that distinguish teachers who maximize student potential from those who do not. Their method was direct: identify effective teachers, learn what distinguishes these teachers from those who are less effective, and use the effective teachers as models for novices—a model that was used to select mentors for this study. *How People Learn: Brain, Mind, Experience and School* (Bransford et al., 2000) provided a missing link from cognitive psychology that explains how the brain, mind, and experience work, and how this seminal information can impact teaching and learning. In other words, rather than compare good teachers to other, less-talented teachers, research findings in cognitive psychology explain how what good teachers do can positively affect the brain, mind, and experience in people who learn. This research provides the rationale for the strategies that maximize instructors' effectiveness and students' learning.

RESEARCH INITIATIVE

In 1992, eight Iowa community colleges, in cooperation with Iowa State University, implemented a faculty-development program for career and technical education faculty new to teaching, yet having years of professional experience in a specialty career or technical field. The Community College Induction Mentoring (CCIM) program was based on 43 instructor teaching and learning outcomes rated essential by 66 Iowa community-college administrators or supervisors, and 177 seasoned faculty. These outcomes are consistent with the attributes of effective instructors suggested by a number of other researchers (Angelo & Cross, 1993; Baker, Roueche, & Gillet-Karam, 1990; Carnevale, Gainer, & Meltzer, 1989; Johnson, Johnson, & Smith, 1998). As a pivotal component of the CCIM program, first-line supervisors selected veteran faculty to serve as mentors to new faculty. Mentors and mentees identified semester goals, and developed corresponding action plans to address the teaching and learning needs of the mentee. The mentor/mentee relationship was structured using the parameters and directions provided in the Community College Mentoring Program Mentor-Mentee Handbook (Van Ast, 1992, 2003). Mentors participated in an 8-hour, in-service workshop entitled "How to be a Mentor" to learn the program parameters and direction, as well as to network with mentors within and outside their institutions. During this time, the mentees' (CCIM instructors) students were asked to complete a questionnaire to gauge their reactions to teaching and learning, and to collect learning self-assessment data, in classes taught by CCIM instructors as compared to classes taught by non-CCIM instructors who were not part of the mentoring program. In a number of cases, the differences in student responses were sufficient to support conclusions that the mentoring program did positively impact student evaluations of instructors.

The professional development program for new career and technical education faculty contained the 43 competencies identified by Van Ast. The added value as it relates to new faculty, as well as to the mentor teacher, is the ultimate emotional health of both the mentor and the mentee in the induction-mentoring process—which, in turn, is the single most significant ingredient within the teaching/learning recipe (Ragins & Scandura, 1994).

While the implication of a novice/mentor relationship seems greater for psychosocial development than for professional growth, there is application to career development (Mullen, 1998). The primary rationale for the induction-mentoring program is that it leads to discernably better instruction for students in the classroom (Mullen & Van Ast, 1997; Van Ast, 2003).

The Community-College Induction-Mentoring (CCIM) 2-Year Program Design

The CCIM 2 year induction-mentor program was designed to ensure that essential support services are provided to instructors in their critical first 2 years of teaching. These support services are targeted toward: a) psychosocial development; b) career development; c) continuing personal support; d) regular and responsive educative experiences, which both extend and enrich the faculty members' initial preparations, as well as address the particular demands of their day-to-day situation; and e) on-going feedback and assessment of their performance and progress over time—culminating in a summative decision by their respective community college employer by the end of 2 years as to whether they should be relieved of their teaching responsibilities, continue on an initial licensure track, or be placed on a regular licensure track.

Program Criteria

Comprehensive criteria to guide the induction-mentoring program include: 1) the program exhibits clear goals and operational objectives; 2) content builds on participants' prior experiences and is related to their school situations; 3) participants are readied to apply what they have learned; 4) content is supported by research; 5) the program builds both knowledge (an understanding of background and concepts) and skills (the ability to put knowledge into operation); and 6) participants' evaluation and accountability are integrated into the program.

Evaluation and Results

Program sources for both formative evaluations and summative evaluations included participants, mentors, immediate supervisors of participants, students in participants' classes, and CCIM facilitators. In formative evaluations, mentors who were surveyed during the program consistently rated participants significantly above the mean on items such as readiness to teach, classroom management, students' participation, and workplace attitudes. Mentors rated participants significantly below the mean on student complaints. Immediate supervisors were probably most concerned and yet complimentary of the new faculty member's competence. They were unanimously supportive, with only one expressing concern about the expense of instructor substitute pay.

Compared to other instructors, CCIM participants were recently evaluated significantly higher by their students on 15 to 18 survey items related to instructor performance and effectiveness in the classroom. Students were asked to rate the instructor/class based on perceptions of reaction and learning items in certain areas. They first rated their mentored instructor; then compared their mentored instructor to nonmentored instructors.

Hypotheses

The following hypotheses were identified for the assessment research:

1. **Students will rate their reactions higher for the CCIM instructors than for the "comparison" classes' instructors.**
2. **Students will evaluate their learning higher in the CCIM instructor's class than in their "comparison" classes.**
3. **Nontraditional students (ages 24–up) will rate their instructor's/class' reaction higher than traditional students (ages 18–23).**
4. **Nontraditional students will evaluate their learning higher than traditional students.**
5. **Students in required program/major courses will evaluate their learning higher in those courses than in their general education courses, based on comparisons of the CCIM instructors with other instructors. (Required program/major courses are the discipline-specific courses required for the student's major. General education courses are the courses required to meet general education requirements for the student's major).**

6. **Students in required program/major courses will rate the reactions to their instructors higher in those courses than in general education courses, based on comparisons of the CCIM instructors with other instructors.**
7. **Students in organized academic programs will evaluate their learning from CCIM instructors higher than those taking single courses. (Organized academic programs refer to full-time enrollment by students. The identifier "single courses" refers to students enrolled part-time, taking one or two courses per semester).**
8. **Students in organized academic program will evaluate their reactions to the CCIM instructors higher than those taking single courses.**
9. **Female students will rate their instructors higher overall (both reaction and learning) than male students.**

METHOD

Participants

Data were collected on four separate occasions from groups of students whose instructors were mentored. The first two sets of data and the fourth data set were collected from students whose instructors were in their first year of the program, while the third set of data included information and responses from students of both first- and second-year CCIM program instructors. Although 1,338 students returned surveys, there were missing data on 289 of them. The 289 surveys were not included in the final data analysis, although an attempt was made to review what data were available on them and compare the discarded data distributions with the 1,049 surveys used as a check for potential bias. There was no obvious evidence of bias, and the percentage of surveys with missing data was relatively consistent between the four data sets, running from 18% to 26%. Tables 1 through 5 present demographic data that refer to the sample of 1,049 students from whom the data were collected.

Apparatus

The survey consisted of four demographics questions, the results of which were provided in the Tables 1–5. The survey also included a series of 18 questions split evenly between instructor or class ratings

Table 1. Gender

	Instructor	Male	Female	Total
Data set 1	1st-year	109	122	231
Data set 2	1st-year	96	68	164
Data set 3	1st-year	81	48	129
Data set 3	2nd-year	101	71	172
Data set 4	1st-year	203	150	353
	Total	590	459	1049

Table 2. Age

	Instructor	≤18	19 to 23	≥24	Total
Data set 1	1st-year	44	75	112	231
Data set 2	1st-year	36	64	64	164
Data set 3	1st-year	37	51	41	129
Data set 3	2nd-year	78	49	45	172
Data set 4	1st-year	180	118	55	353
	Total	375	357	317	1049

Table 3. Reason for taking the course

	Instructor	General*	Major**	Elective	Total
Data set 1	1st-year	28	150	53	231
Data set 2	1st-year	24	112	28	164
Data set 3	1st-year	10	90	29	129
Data set 3	2nd-year	26	94	52	172
Data set 4	1st-year	34	182	137	353
	Total	122	628	299	1049

*The column header "General" indicates that the student is taking course to meet a general education requirement.

**The column "Major" indicates that the course is required for the student's major.

(reaction), and self-evaluations of the learning that went on in the student's classes (learning).

The nine questions dealing with reaction included:

1. The course appeared to be well organized and presented logically.
2. The instructor identified clear objectives and set high expectations.

Table 4. Type of program in which the student was enrolled

	Instructor	Certificate	Diploma	Associate	None	Total
Data set 1	1st-year	26	102	74	29	231
Data set 2	1st-year	20	60	84	0	164
Data set 3	1st-year	8	10	90	21	129
Data set 3	2nd-year	64	8	61	39	172
Data set 4	1st-year	52	83	141	77	353
	Total	170	263	450	166	1049

Table 5. Sample sizes for hypotheses

	First-Year		Second-year	
Hypothesis	n_1	n_2	n_1	n_2
1	524	524	172	172
2	524	524	172	172
3	213	311	45	127
4	213	311	45	127
5	366	50	94	26
6	366	50	94	26
7	471	53	133	39
8	471	53	133	39
9	244	280	71	101

3. The grading procedures reflected the course objectives as outlined in the syllabus.
4. The instructor cares about students, treats them with respect, and is tolerant and fair.
5. The instructor stimulated my interest in the subject matter.
6. The instructor appeared to enjoy teaching the course.
7. During the semester, the instructor provided me with a clear idea of how I was doing.
8. The instructor knows the subject matter and explains it clearly.
9. The course content is related to real life and is up to date.

The nine questions dealing with learning included:

1. Interaction in class is increased through the use of questions.
2. My input in class is heard, valued, and encouraged.

3. **I am urged to succeed in this subject.**
4. **The use of additional help, resources, and effective study skills is encouraged.**
5. **I am involved directly in the learning process (through group participation, hands on experience, individual learning, etc.)**
6. **The course content and teaching styles are adapted to match various ways of learning.**
7. **Feedback is consistent and appropriate.**
8. **The reading and homework assignments are appropriate and relevant.**
9. **My understanding of the subject has increased.**

For each of these 18 questions, the student was to respond once for their current mentored instructor and once for other nonmentored instructors. Including the reference codes for both the students and teachers, the four demographics questions, and two responses requested for each of the 18 remaining questions, there was a total of 42 variables per questionnaire. The sample size (number of students responding) was 1,049. The students were requested to respond to the nine reaction questions and nine learning questions in the form of a 5-point Likert scale. The scale was set up so that a response of “1” corresponded to “Strongly Disagree,” “2” corresponded to “Disagree,” “3” corresponded to “Neither Agree nor Disagree,” “4” corresponded to “Agree,” and “5” corresponded to “Strongly Agree.”

Procedure

Two data sets were obtained during the course of this investigation. The first set, gathered over a 3-year span, includes instructors in their first year of the CCIM program. The second set contains data from instructors in their second year of the CCIM program. Each group was initially analyzed separately, and then a comparison was made between the first- and second-year CCIM instructors’ mean scores in the areas of student reactions and self-perceived learning.

The hypotheses were constructed to compare the “reactions” and “learning” of students in classes taught by mentored instructors enrolled in the CCIM program relative to other nonmentored instructors. The analyses of these data were relatively straightforward, although two analytical methods were required. The first method involved paired comparisons of student responses, and proceeded in the manner described by Johnson and Wichern (1992). The responses to the nine questions by the jth student can be labeled as:

X_{11j} = question 1 for CCIM Instructor X_{21j} = question 1 for Other Instructors
X_{12j} = question 2 for CCIM Instructor X_{22j} = question 2 for Other Instructors
•   •
X_{19j} = question 9 for CCIM Instructor X_{29j} = question 9 for Other Instructors

and the nine paired difference random variables are calculated from:

$$
\begin{aligned}
D_{1j} &= X_{11j} - X_{21j} \\
D_{2j} &= X_{12j} - X_{22j} \\
&\bullet \qquad \bullet \\
D_{9j} &= X_{19j} - X_{29j}
\end{aligned}
$$

Let $D'_j = [D_{1j}, D_{2j}, \ldots, D_{9j}]$ and assume, for $j = 1, 2, \ldots, n$, that

$$E(D_j) = \delta = \begin{bmatrix} \delta_1 \\ \delta_2 \\ \vdots \\ \delta_9 \end{bmatrix} \text{and } \mathrm{Cov}(D_j) = \Sigma_d$$

Johnson and Wichern (1992) suggest that if $D_1, D_2, \ldots, D_n$ are independent $N_9(\delta, \Sigma_d)$ random vectors, then inferences about the vector of mean differences can be based on the following T^2-statistic:

$$T^2 = n(\overline{D} - \delta)' S_d^{-1} (\overline{D} - \delta)$$

where

$$\overline{D} = \frac{1}{n}\sum_{j=1}^{n} D_j \text{ and } S_d = \frac{1}{n-1}\sum_{j=1}^{n}(D_j - \overline{D})(D_j - \overline{D})'$$

and that if n and $n - p$ (where $p = 9$ in this case) are both large, T^2 is approximately distributed as a χ_p^2 random variable regardless of the form of the underlying population of differences. One can then use either of two formulas to generate the $100(1 - \alpha)\%$ simultaneous confidence intervals for the individual mean differences, δ_i: (a) the large sample 100(1 – α)% simultaneous confidence intervals formula

$$\delta_i : \bar{d}_i \pm \sqrt{\chi_9^2}\sqrt{\frac{s_{d_i}^2}{n}}$$

where $\bar{d}_i$ is the ith element of $\bar{d}$, $s_{d_i}^2$ is the ith diagonal element of S_d, and $\chi_p^2(\alpha)$ is the upper (100α)th percentile of a chi-square distribution with p degrees of freedom; or (b) the Bonferroni 100(1 – α)% simultaneous confidence intervals formula for the individual mean differences

$$\delta_i : \bar{d}_i \pm t_{n-1}\left(\frac{\alpha}{2p}\right)\sqrt{\frac{s_{d_i}^2}{n}}$$

where $t_{n-1}(\alpha/2p)$ is the upper 100(α/2p)th percentile of a t-distribution with n – 1 degrees of freedom. The Bonferroni method provides the shorter intervals; however, both methods yield intervals that are somewhat misleading. The simultaneous confidence coefficient, T^2, applies to the *entire* set of intervals that could be constructed for all possible linear combinations (Johnson and Wichern, 1992) and the intervals generated through the above two methods comprise only a small subset of these possible combinations. Specifically, this subset includes the following linear combinations: l_1 = (1,0,0,0,0,0,0,0,0), l_2 = (0,1,0,0,0,0,0,0,0),..., l_9 = (0,0,0,0, 0,0,0,0,1).

The second method also involved comparisons of multivariate means. However, rather than paired comparisons, the means are generated from independent groups with unequal sample sizes and, in many cases, unequal covariance matrices. Johnson and Wichern (1992) also provide guidance for the 2 sample situation with unequal covariance matrices. For large sample sizes, an approximate 100(1 – α)% confidence ellipsoid for $(\mu_1 - \mu_2) = 0$ is given by

$$[\bar{x}_1 - \bar{x}_2]'\left[\frac{1}{n_1}S_1 + \frac{1}{n_2}S_2\right][\bar{x}_1 - \bar{x}_2] \leq \chi_p^2(\alpha)$$

where $\bar{x}$, n, and S refer to the multivariate mean vector, the sample size, and the covariance matrix respectively. The upper (100α)th percentile of a chi-square distribution with p degrees of freedom is represented by $\chi_p^2(\alpha)$. In all cases, a 5% level of significance (α = 0.05) was used.

In some cases, it may be desirable to identify and interpret the coefficient vector for the linear combination most responsible for rejection. Johnson and Wichern (1992) state the most critical linear combination leading to the rejection of the null hypothesis has coefficient vector

$$\hat{l} \propto \left(\frac{1}{n_1} S_1 + \frac{1}{n_2} S_2\right)^{-1} (\bar{x}_1 - \bar{x}_2)$$

RESULTS

The results of the analysis of the first-year CCIM instructor data indicate that null hypotheses 1 ($\chi^2_9 = 144.85$, $p = .00$), 2 ($\chi^2_9 = 112.68$, $p = .00$), 3 ($\chi^2_9 = 23.31$, $p = .01$), 4 ($\chi^2_9 = 22.45$, $p = .01$), 5 ($\chi^2_9 = 20.81$, $p = .01$), and 8 ($\chi^2_9 = 25.02$, $p = .00$) are rejected at the .05 level of significance. Null hypotheses 6 ($\chi^2_9 = 15.28$, $p = .08$), 7 ($\chi^2_9 = 7.06$, $p = .63$), and 9 ($\chi^2_9 = 7.87$, $p = .55$) were not rejected at the .05 level of significance.

Our data provide adequate grounds for rejecting the hypotheses that there is no difference between student ratings as to both their reaction (hypothesis 1) and learning (hypothesis 2) under CCIM instructors as opposed to their “other” instructors. The data also support the conclusions that students at or above the age of 24 rate their instructor or class differently with respect to both reaction and learning than do students in the age group 18 to 23 (hypotheses 3 and 4, respectively). Hypotheses 5 (learning) and 6 (reaction) required a somewhat different grouping for analysis. The data were first sorted according to whether a course was required as a part of a student’s program or simply a general education course. The difference in the CCIM means versus other instructor means for each of these two groups was then examined. One may conclude, based on the data, that students do evaluate their learning differently in required courses as opposed to general courses; however, the same cannot be said with respect to their reaction. Regarding hypotheses 7 and 8, one would not conclude that there is a difference in the evaluation of student learning under CCIM instructors in courses taken as part of a requirement for program/major courses versus organized, academic courses. There is, however, evidence that student reaction ratings under CCIM instructors in courses taken as part of a requirement for program/major courses versus organized, academic courses are significant at the .05 level. Finally, as for hypothesis 9, the data do not support the conjecture that female students rate their instructors higher overall than do male students in both reaction and learning in required program/major courses and organized academic courses.

The results of the analysis of the second-year CCIM instructor data were consistent with the results of the first-year data for five of the nine hypotheses—hypotheses 1 ($\chi^2_9 = 61.7, p = .00$), 2 ($\chi^2_9 = 57.41, p = .00$), 4 ($\chi^2_9 = 18.00, p = .04$), 5 ($\chi^2_9 = 18.70, p = .03$), and 8 ($\chi^2_9 = 69.21, p = .00$).

The null hypothesis for hypothesis 3 was rejected for first-year CCIM instructor data and was not rejected for second-year CCIM instructor data ($\chi^2_9 = 14.75$, $p = .10$). The opposite was true for hypotheses 6 ($\chi^2_9 = 16.97$, $p = .05$), 7 ($\chi^2_9 = 36.30$, $p = .00$), and 9 ($\chi^2_9 = 32.46$, $p = .00$). That is, the null hypotheses were not rejected for first-year CCIM instructor data and were rejected for second-year CCIM instructor data. For second-year CCIM instructors, the data do not support the conclusion that students at or above the age of 24 rate their instructor or class differently with respect to reaction than do students in the age group 18 to 23 (hypothesis 3), With respect to hypotheses 6 and 7, one may conclude that students do evaluate their reactions differently in required courses as opposed to general courses. The analysis relative to Hypothesis 7 leads one to believe that there is a difference in the evaluation of student learning under CCIM instructors in courses taken as part of a requirement for an organized academic program versus individual courses. For hypothesis 9, the second-year CCIM instructor data do support the conjecture that female students rate their instructors higher overall than do male students.

Finally, in a comparison between first-year and second-year CCIM instructors, the following results were obtained. We cannot state that students rate their reactions higher for the second-year CCIM instructors than for the first-year CCIM instructors (hypothesis 1: $\chi^2_9 = 11.27$, $p = .26$). However, our data provide adequate grounds for rejecting the hypothesis that there is no difference between student ratings as to their learning under second-year CCIM instructors as opposed to first-year CCIM instructors (hypothesis 2: $\chi^2_9 = 17.85$, $p = .04$).

DISCUSSION

This study was based on extensive research indicating that students' perceptions of learning, as well as their perceptions of their reactions to the teaching and learning setting, are reliable sources for determining "instructor effectiveness." The results of this investigation—to determine the effectiveness of new instructors who have actively participated in a structured mentoring program versus those who have not—statistically support the increased teaching and learning effectiveness of mentored instructors versus nonmentored instructors.

Five of the nine hypotheses were supported for both first and second-year instructors. These hypotheses included: (1) students will rate their reactions higher for the CCIM instructors than for the "comparison" classes' instructors; (2) students will evaluate their learning higher in the CCIM instructor's class than in their "comparison" classes; (4) nontraditional students will evaluate their learning higher than traditional-aged students; (5) students in required program/major courses will evaluate their learning higher in those courses than in their general education courses, based on comparisons of the CCIM instructors with other instructors; and (8) students in organized academic programs will evaluate their reactions to the CCIM instructors higher than those taking single courses. Three of the nine hypotheses were rejected for first-year instructors, but supported for second-year instructors. These hypotheses included: (6) students in required program/major courses will rate the reactions to their instructors higher in those courses than in general education courses, based on comparisons of the CCIM instructors with other instructors; (7) students in organized academic programs will evaluate their learning from CCIM instructors higher than those taking single courses; and (9) female students will rate their instructors higher overall (both reaction and learning) than male students. The remaining hypothesis—(3) non-traditional students (ages 24–up) will rate their instructor's/class' reaction higher than traditional students (ages 18–23)—was supported for first-year instructors, but rejected for second-year instructors. This research indicates that students perceive an increase in instructor effectiveness resulting from the structured mentoring program. Additional research conducted by Van Ast (1999) has reported benefits of mentoring from the mentor's perspective, the mentee's perspective, and the first-line supervisor's perspective.

Mentoring research of the 1970s, 1980s, and 1990s provides a wealth of information regarding the functions, levels, and phases of the mentoring process. Primarily, much of the research was conducted with private for-profit organizations. Mentor research in education was conducted at the K–12 level, with limited literature for higher education. Much has changed since this early round of mentoring research. A November 2002 database search netted hundreds of documents dealing with mentoring at the community-college level alone. Within the community-college level, documents were retrieved in eleven major categories: 1) mentoring adjuncts and part time faculty, 2) mentoring underprepared students, 3) mentoring nontraditional students, 4) mentoring faculty members, 5) mentoring to prepare for leadership positions, 6) faculty mentoring students, 7) teachers mentoring paraeducators/teacher interns, 8) old faculty mentoring new faculty, 9) peer mentoring, 10) community-college students mentoring middle-school students, and 11) college-to-college mentoring.

Trends in mentoring research are even more prevalent in the private for-profit sector than the public education sector. Dreher and Asi (1990) investigated how race, gender, and mentoring experiences account for compensation outcomes among MBA graduates. Ragins and Scanderra (1994) looked at costs and benefits associated with mentoring, specifically costs related to gender differences. Similarly, Ragins and Cotton (1999) examined the effects of the gender composition and type of mentoring relationship on mentoring functions and career outcomes.

Mullen's (1998) research on mentoring relationships from the mentor perspective focused on creating a profile of the mentor who serves in both the career-related and psychosocial functions, which according to Kram (1983) is the most intense mentor/mentee relationship.

Astin's Involvement Theory (1984) is based on age-old wisdom "that the greater the student's involvement... the greater will be the amount of learning" (p. 307). The work of Mullen and Van Ast (1997), as well as that of Noe (1998), supports Astin's (1984) theory. The more time a mentee spends with a mentor, the greater the mentee satisfaction with the mentor and their respective career and psychosocial development progress. Mullen & Van Ast (1997), Ragins & Scandura (1994), Levinson, Darrow, Klein, & McKee (1978), and Kram (1983) reported the same to be true for the mentor's satisfaction.

IMPLICATIONS FOR PRACTICE

Overall, students' perceptions of their mentored instructors' teaching and learning effectiveness—whether they be full-time or part-time students, or students enrolled in required program/major course or general courses—are significantly better when compared to nonmentored instructors. This is true for both first first-year instructors and second-year instructors. Establishment of a structured mentoring program results in an increase in students' perceptions of instructor effectiveness.

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