Final Report

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Presentation of Three Papers at the 7th International Conference in Williamsburg, Virginia of the American Institute of Higher Education, March 7-9, 2012

B. **Reinstatement of Problems Researched:**

Dr. Sid Womack, Dr. David Bell, and I were accepted to speak at the American institute of Higher Education 7th International Conference held in Williamsburg, Virginia, March 7-9, 2012. We had two papers accepted as a team: Factor Analysis in intern Achievement" by Womack, Hanna, and Bell, and Mentorships in Higher Education by Hanna and Womack. Dr. Bell unfortunately was not able to attend this conference due to job demands on campus. I also had a solo presentation.

In the first study, factor analysis of the data from a Praxis-III like assessment was done to find out if (1) there were any factors in the assessment of effective teaching (2) if those factors corresponded to the four domains, as suggested by the Educational Testing Service, and (3) which factors seemed to be most important in effective teaching.

The second study presented by Hanna and Womack in Williamsburg was a survey of Arkansas Tech University faculty in the spring of 2010 about mentoring in a higher education environment. Data from 46 faculty, ranging across all but one college of the university, portrayed the extent of mentoring during the formative years of junior and senior faculty.

The third study presented by myself was on the Academic Achievement of 9th grade students in Arkansas. It was a presentation of data from my doctoral dissertation in which I found that the more physically fit students were, the higher they tended to score on academic achievement tests—particularly in the area of math.

C. **Review of the professional enhancement opportunity , creative work, or research procedure.** In the first study, data gained with a Praxis-III like assessment from 130 Tech early childhood, middle level, and secondary interns from spring of 2010 were subjected to factor analysis. It was found that lesson planning was the first factor extracted, accounting for 41% of the variance in ratings. The next three factors extracted were higher order thinking by both students and teachers, safe school environment, and professionalism. Beyond the variance accounted for by those four factors, there were no other factors found that would meet the usual mineigen value of one criteria.

The mentorship study used QuestionPro software to elicit data from ATU faculty about the nature and extent of mentorships experienced during their higher education careers. Independent variables included faculties' college, rank, academic discipline, and gender. Questionnaire items solicited information about how much help was given by more experienced faculty to newer faculty in teaching, assessment of student learning, involvement in university committees at all levels, research, and service. 46 faculty, spread fairly evenly across all colleges except the graduate college, responded to the questionnaire. No one declined to finish the survey once they began it.

Manuscripts of the studies are included at the end of this paper in Appendix 1 and Appendix 2. I will not include a manuscript of the third study due to the extensive length of it being well over 120 pages. However, if anyone should ever need to see the study, I will be happy to provide it.

D. **Summary of findings, outcomes, or experiences had**. The findings on lesson planning are of theoretical importance to the teaching profession. The emphasis on lesson planning can now move from "sermonization" to a much more scientific basis in the conceptual frameworks of teacher education programs. The same study was submitted to the *Administrative Issues Journal*, a national journal, and was readily accepted in the second issue of the new journal originating out of Southwestern Oklahoma State University. These findings were discussed in a Curriculum and Instruction faculty meeting during the first week of school this August, and a copy of the Power Point version was emailed to every C&I faculty member. These findings helped "put arrows in their quivers" for stressing the importance of lesson planning to our students.

On the mentorship study, it was found among Arkansas Tech faculty that those of the "Boomer" generation tended to have had rich and stimulating mentorships during their formative years in higher education, but this same group for the most part is not doing much to offer substantial, long-term, and effective help to the younger generation of professors who are following them.

E. **Conclusions and recommendations.** The findings of the factor analysis study have led easily to a multiple regression study about lesson planning. From the new study on the most vital components, we have been able to identify the parts of

lesson planning that seem to make the most difference in student learning and which ones do not. That follow-up paper has been accepted at the 8th International Conference of the American Institute of Higher Education which is set to convene in Niagara Falls on October 10-12. I along with Dr. Stephanie Pepper are set to present that paper for themselves and their associate authors, Dr. Bell and Dr. Womack are not planning to attend that conference.

The essentials of lesson planning have been the subject of incessant debate since likely the dawn of man. This study, and the new one to be presented in Niagara Falls, are the only ones of their kind that approach this problem empirically instead of philosophically. The *Administrative Issues Journal* has expressed a great degree of interest in our second paper. Later on this year we plan to make a decision whether to send it there or to some other national journal.

The recommendation from the mentorship paper is to find a way, working in concert with university administration, to break the dearth of mentorships currently occurring on our campus. Younger faculty need the help of older faculty, and older faculty can find joy in giving, if only they would. Perhaps mentorships need a little structuring.

Appendix 1

Factor Analysis of Intern Effectiveness

Factor Analysis of Intern Effectiveness

Sid T. Womack, Shellie L. Hanna, and David Bell

Arkansas Tech University

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Abstract

Four factors in teaching intern effectiveness, as measured by a Praxis III-similar instrument, were found among observational data of teaching interns during the 2010 spring semester. Those factors were lesson planning, teacher/student reflection, fairness & safe environment, and professionalism/efficacy. This factor analysis was as much of a statement about effective teaching as it is about the technical aspects of an instrument utilized to assess it. Forty-one percent of effective teaching was found to be in the lesson planning.

Key words: Effective teaching, supervision of interns, efficacy, safe school environment, teacher reflection, higher order thinking, NCATE Standard One, novice teachers, observation systems.

Factor Analysis of Intern Effectiveness

At our university we are constantly looking for ways to help teacher education candidates improve their teaching. As is probably the case in most teacher education units in the United States, our college of education uses an observation form for assessing teacher intern performance and for giving feedback. When the *Formative Observation and Intervention Form* was created several years ago, it was constructed so that items and domains had a great resemblance to the Pathwise evaluation (ETS, 1996). Accordingly, out of respect for intellectual property rights, we obtained written permission from the Educational Testing Service before beginning to use it with our candidates. This form has become useful not only for assessing intern performance, but also for identifying the most salient elements of effective teaching. Put another way, "What is *really* being identified as being effective in my teaching?"

Pathwise was developed through Educational Testing Service as an observation system to gather rich, research-based, objective classroom data based on evidence stemming from the effective teaching research (Chan, 1998). The effectiveness of teachers during classroom settings is rated as a category one, category two, or category three, depending upon very specific scoring criteria (ETS, 1996), with a category one denoting an unacceptable level of effectiveness. The assessment of teaching competency is thus a very authentic portrayal of teaching performance since a minimum of subjectivity is employed. In addition to the 19 heavily research-based items related to the Pathwise system, two items were added locally for

administrative and pragmatic reasons: one under Domain A to denote total preparedness to teach, and another under Domain D about the candidate meeting professional responsibilities.

The observation form was used to collect data on 21 research-based items of teacher performance. Those 21 areas were grouped into four domains of (A) Organizing Content for Student Learning (B) Creating an Environment for Student Learning (C) Teaching for Student Learning (D) Teacher Professionalism. Since the data obtained using the *Formative Observation and Intervention* form were used to make personnel decisions about candidates, we decided to study it in depth, using candidate data from the Spring Semester of 2010. We felt that we could gain insight into the characteristics of effective teaching in addition to exploring some technical aspects of the instrument by doing this study.

A priori assumptions

Factor analysis can be used to test whether initial assumptions about a factor structure of an assessment instrument have empirical validity. Our assumptions were

1. Four factors would be found, corresponding to the four domains of Pathwise;
2. The items that measured those factors would be located within the domain structure suggested by Pathwise.
3. The two items that had been added locally would not "load" (correlate) significantly upon the rest of the factor structure.
4. Decisions about the factor structure would not be based heavily upon the two locally-developed items alone.

Definitions

Domain: A collection of five or more items on the *Formative Observation and Intervention Form* designed to assess the same construct. The number of items on the form exceeded the

minimum number of three items to create a component (expected factor) as described by Hatcher and Stepanski (p. 460).

Effective teaching: An assessment of teaching using the *Formative Observation and Intervention Form* (sometimes referred to as the *form*) which yielded measurements of 2 or above in every one of 21 items on the form. Teaching was not regarded as effective if there was not enough evidence during an observation to support a category of at least a 2 in each and every one of the 21 items.

Factor: A mathematical communality with an Eigenvalue of at least 1. On the *Formative Observation and Intervention Form,* a mathematical communality that accounted for at least $1/21^{st}$ of the variance of the entire 21-item instrument used to measure teacher effectiveness.

Factor name: The name given to a collection of items from the *form* identified during the factor analysis process whose items have a statistically significant ($P<.01$, $n=130$, one-tailed test; Ferguson p. 494) correlation to the factor and which seem to best typify the construct of the five items most correlated to the factor.

Purpose of the Study

The purpose of the study was to confirm or deny the four *a priori* assumptions already stated.

Method

Hatchett and Stepanski (1994, p. 461) state that for factor analysis, the sample size should be the larger of 100 subjects or five times the number of variables being analyzed. Five times 21 items is 105. There were 130 teaching interns in the sample, and 416 teaching observations recorded, so the sample was more than adequate in size to accommodate this type of analysis. Methodologically this study should be considered a "common factor analysis" (Ingram, 2011).

Participants

Participants were 63 early childhood, 9 middle level, and 58 secondary education interns, a total of 130 senior intern candidates. They were assigned to school campuses in the Western part of Arkansas, particularly along the I-40 corridor from Morrilton westward to the Arkansas-Oklahoma state line. All were assigned to accredited public schools and in content areas appropriate to their majors and expected licensures. Placement was done through the office of Teacher Education Student Services at the university. All public school and university faculty who participated in any direct way in intern evaluations were made thoroughly familiar with the Pathwise Evaluation System from the Educational Testing Service through professional development experiences provided through the College of Education. The items of the form and their organization into subscales called domains is shown in Table 1. Table 1 also depicts the factor structure anticipated by the creators of the *form* at the time the evaluation instrument was made.

Insert Table 1 about here.

Materials and Procedures

Before interns located to their respective placements, they were briefed about the expectations for the field experience. Early childhood majors and middle level majors enrolled in a 16 week course for 15 and 12 semester hours, respectively; secondary majors enrolled in a nine-semester hour course encompassing a 12-week internship. Secondary majors completed an on-campus course in public school law, history and philosophy of education, and content area reading before beginning their 12-week internship. All interns had completed substantially all of the requirements for their respective majors except for the internship itself.

The *Formative Observation and Intervention Form* was used by campus-based and field-based supervisor for evaluation purposes and to provide feedback to interns. For the purposes of this study, we decided to use the *form* to investigate the factor structure of effective teaching, using data from 130 interns of the spring semester of 2010. It was the intent of the supervisory experience to observe each intern at least four times while the intern was teaching; this occurred in most but not entirely all instances. Prior to this investigation, a previous study utilizing the same data had been done to determine the reliability, validity, and suitability of the *Formative Observation and Intervention Form* in our application of it. Those facets of the f*orm* were believed to be more than adequate (Womack, Hanna, Woodall, & Callaway, 2011).

Artifact Reliability. The uncorrected split-half reliability of the Formative Observation and intervention form was 0.976 with 416 usable observations. The standard error of measurement was 2.6 points out of 63 possible points on the entire 21-item instrument. It appeared that the assessment was reliable.

Artifact validity. All items on the *form* were mapped to the state's licensing standards and to the Praxis III (Pathwise) assessments. These mappings were recorded on several documents that became part of the teacher education unit's electronic exhibits pursuant to accreditation by the National Council for Accreditation for Teacher Education (NCATE) and by the State.

Results

Data from 416 observations of 130 candidates were obtained during the spring semester of 2010. These occurred as faculty or clinical practice instructors completed four cycles of evaluations while observing interns in teaching situations.

Factor Loading

The principal purpose of our study was to determine if there were factor loadings on this measure of effective teaching and, if principal factors were found, to determine what those factors were by carefully assigning names to them. Procedure FACTOR of the Statistical Analysis System was used to discover factors, using the suggested prior communality estimate of one and a minimum Eigenvalue of one (Hatcher & Stepanskie, 1994).

Table 2 about here

SAS output indicated that were likely four factors within the observational data from the interns that met those criteria. The fifth factor was shown on Table 2 to show the reader where the Eigen break was. The scree plot was somewhat consonant with that finding while indicating the presence of an initial large factor (Figure 1) that accounted for 41 percent of the variance in teaching effectiveness scores.

Insert Figure 1 about here

Factor Detection

As Hatcher and Stepanski (1994) and Ingram (2011) indicate, interpretation of factors and of items correlating with factors is subjective. This may seem counter to the appearance of the mathematical precision of the output of a program like PROC FACTOR, but researchers are left to adopt their own criteria for factors and items, given a few suggestions from the statistical literature. We determined that we would recognize a factor if it had an Eigenvalue of at least one, appeared distinct on the scree plot, and accounted for at least five percent of the variance. We determined that we would recognize an item as being associated with a factor if its correlation with a factor reached statistical significance at the .01 level. We planned to name a

factor in special consideration of its five greatest correlates (assuming there would be at least five), in view of the *a priori* domains from which the items came, and in view of the language of the items. The number five was chosen because of the original minimum of five items per domain on the *form.*

Item-Factor Identification

Items from the *Formative Observation and Intervention* form were allowed to remain in the factor structure if they correlated significantly (critical r=.230, p<.001) with the factor. Statistical significance is not mandated in factor-naming, but it is a standard that is commonly used. Fifteen items correlated significantly with the first factor (see Table 3), a factor that accounted for 41 percent of the total variance.

Table 3 about here

Factor Naming

The first factor was named "lesson planning." In referencing the correlations to the items on the observation form, two of the top five correlations were with items that dealt very obviously with planning (A2, A5). B3 (challenging learning expectations) usually occur as a result of careful lesson planning. D2 and D4 could be considered extensions of planning in that planning promotes efficacy and a sense of capability in reaching out to parents.

Using the rotated varimax factor pattern, the other three factors were also named. The number of items correlating significantly with the remaining three factors were considerably less. The second factor correlated significantly with items C3, D1, D2, C5, and D4. The second factor was named "Teacher and student reflection" in consideration of the language of the items about teacher reflection on goals met, initiation of modifications for students' needs, and student

higher order thinking. The third factor was named "Fairness/safe environment" in view of the language of most of the items of most of the items contributing to its variance. The third factor correlated significantly with items B1, B4, B5, A2, and D3. Three of these are addressed in Domain B, Creating Environment for Student Learning. Domain B was measured during the dynamics of actual instructional events. The fourth factor correlated with items D5, D3, D2, A1, and D4. The fourth factor was named "Professionalism and efficacy" in deference to the predominant language of the items most associated with it—"on time, professional appearance, follows policies . . . builds professional relationships, collaborates . . . accepts responsibility, efficacy . . . reflects on goals met."

In an effort to better visualize which items actually loaded with which factors, we constructed a simple incidence table (Table 4). It seemed apparent that items correlated

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Table 4 about here.

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with factors were spread *across* rather than *within* what had been considered *a priori* to be in different domains. We were able to see some inter-relationships that make up the complex task called "teaching." Planning, for instance, touches not only items A1 through A6, but also the rapport that teachers are able to build with students (B2), the framing of challenging learning expectations (B3), planning for physical safety (B5), the making of content comprehensible (C2), and five other items.

Discussion

Given the nature of the assessment instrument—one designed to assess effective teaching, with its reliability and validity, this study was not only a study on technical issues, but also on the nature of effective teaching itself. As mentioned earlier, there were three *a priori*

assumptions about the factor structure of the instrument that was tested in this factor analysis. They were:

1. Four factors would be found, corresponding to the four domains of Pathwise;

2. The items that measured those factors would be located within the domain structure suggested by Pathwise.

3. The two items that had been added locally would not load significantly upon the rest of the factor structure.

4. Decisions about the factor structure would not be based heavily upon the two locally-developed items alone.

With regard to *assumption one*, four factors were found, but they did not even nearly correspond to the subscales suggested by our Praxis III-like instrument, the *Formative Observation and Intervention* form. Regarding *assumption two*, the items that loaded most heavily on each of the four factors were not all from the respective domains of the *form*—rather they were scattered across several domains. The first and largest factor, that of planning, had item loadings from all four domains. Lesson planning, correlated significantly with 15 of 21 items of our research-based instrument that was designed to assess effective teaching Only in the fourth factor were most of the five most-correlated items from the domains that had been suggested *a priori*. Regarding the *third assumption* about the two locally developed items—ones that had not been expected to" load" or correlate with the rest of the instrument—item A6 as a reflection of total preparedness to teach a specific lesson was at least significantly correlated to three of the four factors. The locally-added item on Domain D, item D5 about being on time and meeting professional responsibilities, "loaded" on and was significantly correlated on factor four, being the most correlated of the items within the factor. Thus, speaking to the *fourth*

assumption, while decisions about the factor structure ended up being related to the two locally-developed items, the data did not suggest that those two items were "out of place" compared to the 19 ETS-based items.

The Value of Lesson Planning. Forty-one percent of the variance in effective teaching in our interns was accounted for by lesson planning. That is, before they walk into a classroom and utter the first word of the day, 41 percent of student learning has already been decided by the preparedness or lack thereof of the teacher for that specific moment. Intuitively we in teacher education have emphasized the importance of careful and thorough lesson planning to novice teachers. With the findings of this study, that importance need no longer be one advanced only by intuition. Lesson planning as a significant endeavor goes beyond just deciding which method or which activity to utilize in a lesson; there was little evidence in our findings to promote any particular methodology as a panacea for teaching any or all subjects. Rather, lesson planning touches the eventual method of assessment that students will face, planning for safety in the physical environment, planning for fairness, planning for challenging learning expectations and for higher-order thinking, planning for effective pacing and time on task, and more. Teachers who are constantly prepared for the next day, week, and month of teaching find it easy to approach and interact with parents. It is easier to cultivate rapport with students when "What will I be doing next period?" is not a real concern. For these and other reasons, the value of lesson planning can hardly be overstated.

The Value of Reflection and Higher-order Thinking. Teacher reflection and student higher order thinking, the second largest factor, accounted for 6.47 percent of the total variance in teacher effectiveness. Reflection enables teachers at all experience levels to gain much more from their experiences than just the initial exposure. Our interns are required to write reflections

about the events of each day. The value of higher order thinking for both the teachers and their students is well established in the literature.

The Value of Fairness and of a Safe-School Environment. Fairness and safe-school environment accounted for 6 percent of the variance in teacher effectiveness. Students need to be treated fairly by teachers and by other students. Students need to be assured that their work will be evaluated fairly by teachers. They also need to be assured that they will not be bullied by classmates. Most states have passed laws during the past decade to deal with bullying. Teachers and administrators should do their part in enforcing those long-overdue laws.

Professionalism, responsibility, and efficacy. Professionalism accounted for about 5 percent of the variance in teacher effectiveness. At least two Domain D items loaded on each of the four factors. Professionalism must be part of everything that a teacher does. Professionalism is expressed in the effort level that teachers show in always being prepared for classes. Professionalism is shown in the preparedness that teachers show in adopting and implementing classroom management strategies. Professionalism is shown in the ways that teachers treat other teachers and administrators. Professionalism is shown in the ways that teachers seek interactions with parents.

Other variance. About 41 percent of the variance was not accounted for by the model. That variance in teaching effectiveness was scattered among many small categories. With the high reliability and small error of measurement, it was not believed that measurement error was a large factor. Many small but essential behaviors comprise effective teaching. They add in small but incremental ways to the total amount of student learning that takes place.

Conclusions

After years of utilizing the *Formative Observation and Intervention Form*, this study helps the observer to be able to have a discussion with interns about the importance of planning. As professionals, we often try to stress this to pre-service teachers without much success. Now we have a number that we can place on what is really important and to what degree planning is important. That number is 41% of their success. This information can help to give concrete evidence to students as well as teachers how important their planning can be.

Knowing what areas make a real difference can also help with planning on the part of the university. It seems crucial to spend time training our pre-service teachers in the skill of planning. Therefore, it is important to spend the time in our courses with specific training on the importance and the methodology in specifically how to plan for teaching.

The values of *teacher reflection* and of *student higher-order thinking* are well established in the literature. When teachers reflect, they are able to "re-experience" a lesson many times over and to learn from both their successes and failures. Students absorb, re-arrange content, and store it in long-term memory in ways that are personal and idiosyncratic to each of them. Reflection and higher-order thinking should continue to be emphasized, regardless of the grade level of the teachers and students involved.

Fairness and *safe-school environment* have arisen as significant factors especially in the past twenty years. Incidents such as those in Jonesboro, Arkansas, Columbine, Colorado, and Virginia Tech have given a heightened awareness of the need to feel secure. Without those feelings of security, higher-order thinking and reflection are not likely to occur (Maslow, in Ormrod, 2004, pp. 432-433). In the past generation, our society has become more aware of

bullying and the long-term, negative effects of bullying. Students need to feel safe not only from the forces outside of the classroom, but also from those that are within.

Professionalism, responsibility, and efficacy are not only in the interactions with other teachers and parents, it goes much deeper. It involves the teacher caring about their profession. It involves the teacher taking on the responsibility for their students learning. Interestingly enough, without good daily planning, it is nearly impossible for any of this to happen. In conclusion, it all comes back to planning. Without a substantial effort and skill in this area, the intern or teacher cannot effectively establish a classroom of learning that is fair, safe, has higher order thinking, or enables students to grow in a productive manner. We as teacher educators must be prepared to model and teach these skills to our pre-service teachers and to our interns for them to have success and become effective teachers.

Recommendations

A recommendation for future research would be to further explore which kinds of planning seem to enhance teacher effectiveness most. It is likely that all forms of planning are not equally productive.

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Table 1

Item specification and split-half reliability for a performance-based assessment of teacher effectiveness.

Item
Subscale: Domain A, Organizing Content For Student Learning
A1. Demonstrates knowledge of students' backgrounds, awareness of diversity in planning lessons
A2. Prepare clear learning objectives appropriate for all students
A3. Connect past, present, future content
A4. Vary methods and materials for learning . . . developmentally appropriate
A5. Align learning goals with assessments . . . systematic, monitoring, diagnostic
A6. Total preparedness for teaching
Subscale: Domain B. Creating Environment for Student Learning
B1. Models and promotes fairness with and among all students
B2. Generates a working rapport with all students
B3. Establishes high realistic expectations for all students
B4. Exercises consistent, appropriate behavior management
B5. Construct safe environment beneficial to learning for all students

Domain C: Teaching for Student Learning

C1. Clear Goals & Instructional Procedures

C2. Makes content Comprehensible, Meaningful Engagements, Connections

C3. Encourage all students to Extend thinking, Questioning, Critical thinking, Creative thinking

C4. Monitor understanding, give specific Feedback, and Adjust for all students

C5. Use instructional time effectively, Effective pacing, Time on Task

Domain D: Professionalism

D1. Reflect on extent of goals met

D2. Initiates modifications, accepts responsibility, efficacy

D3. Build professional relationships, collaborates

D4. Parent/guardian communication

D5. On time, professional appearance, meets deadlines, follows policies

Odds-Evens correlation 0.967, N=416 obs.

Categories for each item were 1=Insufficiently motivated and insufficiently knowledgeable to perform in classrooms unless assisted

2=Sufficiently motivated and knowledgeable to perform and performs adequately appropriately in most classroom situations, meeting most learners' needs

3=Very well motivated, very knowledgeable about performance, and performs capably and flexibly in varied classroom situations with all learners

Table 2

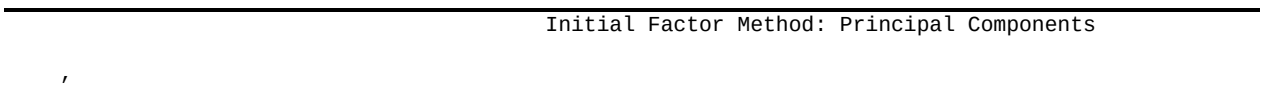
Eigenvalues of the correlation matrix.

Factor	Eigenvalue	Difference	Variance accounted for	Cumulative %
1	8.63922	7.28065	41.14 %	41.14
2	1.35857	0.09839	6.47	47.61
3	1.26018	0.21271	6.00	53.61
4	1.04748	0.06676	4.99	58.60
5	0.98072	0.03118	4.67	63.27

N=416 observations from 130 teaching interns.

Figure 1

Scree Plot of Eigenvalues for ratings of teacher intern performance



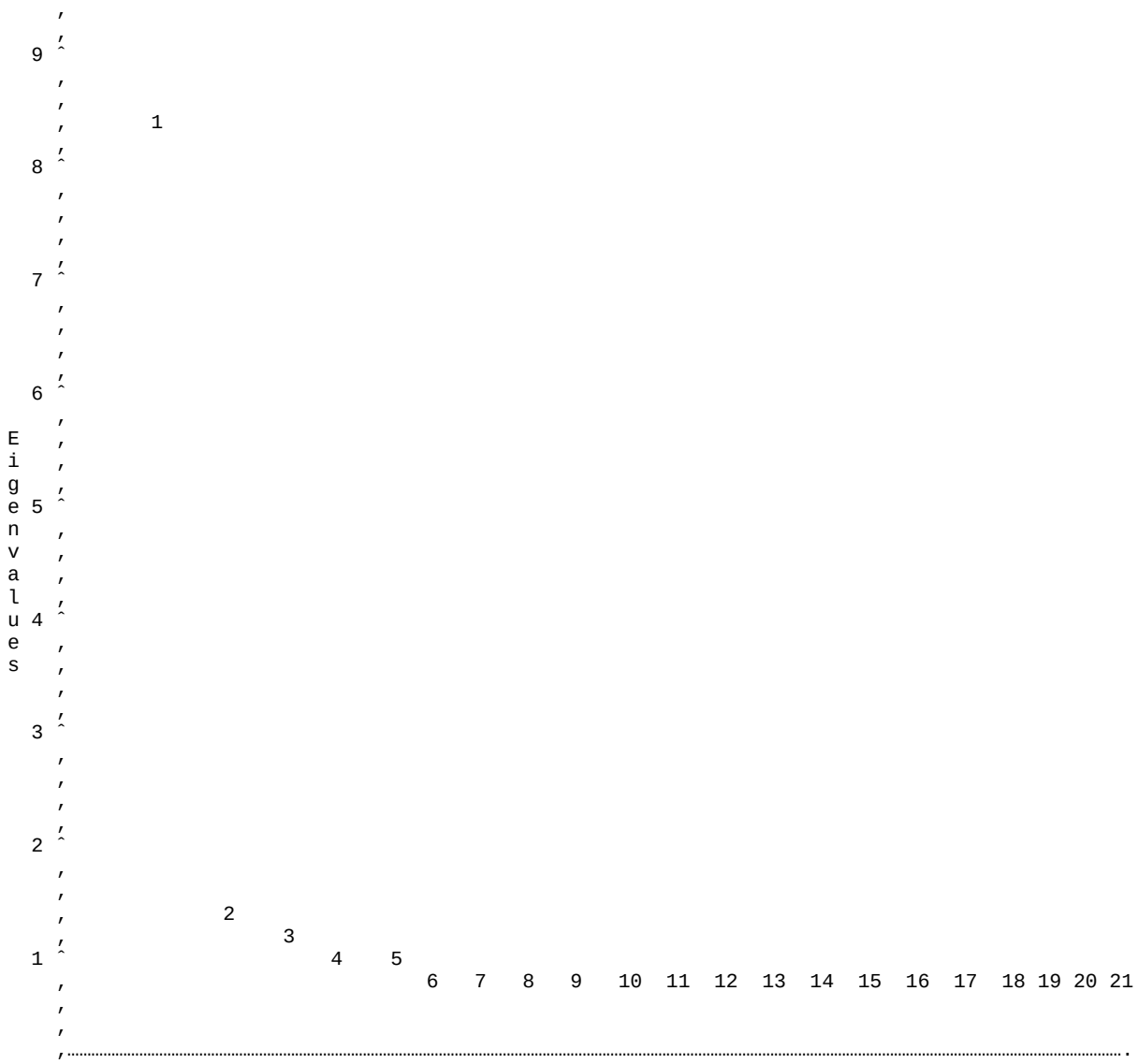


Table 3

Rotated factor pattern

Factor	1 Planning	2 Reflection	3 Fair/safe	4 Professionalism
Items/correlations	A3/0.67	C3/.77	B1/.77	D5/.71
	C4/.66	D1/.66	B4/.63	D3/.64
	A4/.62	D2/.66	B5/.54	D2/.46
	D2/.59	C5/.51	A2/.46	A1/.45
	C1/.57	D4/.51	D3/.44	D4/.42
	C2/.56	C1/.45	A5/.39	A4/.35
	A6/.53	C2/.44	B2/.36	B3/.33
	B2/.51	B4/.43	A1/.35	B2/.29
	B5/.50	A6/.39	D2/.39	A2/.28
	C5/.50	A5/.35	A3/.29	A6/.27
	A5/.47	C4/.25	D1/.27	A3/.27
	A2/.47	------*	C5/.24	D1/.27
	B3/.46	------*	--------*	--------*
	D4/.45	------*	-------*	-------*
	A1/.43	------*	-------*	--------*
	--------*	-------*	-------*	--------*

* correlation was not significant

Table 4

Factors loaded on by each item

Item	Factor 1	Factor 2	Factor 3	Factor 4
	Planning	Reflection	Fair/safe	Professlsm
A1. Awareness of student diversity	X		X	X
A2. Prepare clear learning objectives	X		X	X
A3. Connect past, present, future content	X		X	X
A4. Vary methods/ materials for learning	X	X		X
A5. Align learning goals with assessments	X	X		X
A6. Total preparedness for teaching	X	X		X
B1. Models and promotes fairness			X	
B2. Rapport with all students	X		X	X
B3. Challenging learning expectations	X	X		X
B4. Consistent behavior management		X	X	
B5. Physical environment, safety	X		X	
C1. Clear goals & instructional procedures	X	X		
C2. Makes content comprehensible	X	X		
C3. Critical thinking, creative thinking		X		

C4. Teachable moments, monitor & adjust	X	X		
C5. Effective pacing, time on task	X	X	X	
D1. Reflect on extent of goals met		X	X	X
D2. Accepts responsibility, efficacy	X	X	X	X
D3. Professional relationships, collaborates	X		X	X
D4. Parent/guardian communication	X	X		X
D5. On time, prof. appearance, policies				X

Appendix 2

Mentorships in Higher Education

Mentorships in Higher Education

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Abstract

Mentoring in higher education seems to occur sporadically if it occurs at all. Mentoring involves a helping relationship between a faculty member who is either new to college level teaching or who is new to the institution, and a faculty member who has been teaching at the college level and at the institution for a longer period of time. This study looked at mentoring patterns at a mid-sized university in the South. Of particular interest were contrasts between the reflections of tenure and non-tenured faculty. Results included only 38% of faculty surveyed receiving mentoring with most of the mentoring being directly related to the tenure and promotion process. Findings also indicated that the higher ranked an individual was, the more likely they were to have received mentoring while at lower ranks. That mentoring was also more likely to have included assistance with scholarly productivity.

Keywords: Mentoring, tenure, promotion, instructional improvement, supervision.

Mentor was the elderly friend of Odysseus, the hero of the Odyssey. Before Odysseus went to fight in the Trojan War, he made Mentor the guardian of his son, Telemechus. In Mentor's shape, the goddess Athena helped Telemechus search for Odysseus. Today the word *mentor* means wise and faithful counselor.

Within higher education, mentorships are necessarily faculty-to-faculty affairs as opposed to administration-to-faculty affairs. The minute there is a significant power differential between a mentor and a protégé', the protégé can be at significant risk for certain kinds of abuse. When there is a significant power differential, the relationship is not likely to be that of mentorship, but supervision—supervision in a traditional sense.

“The reason so many new teachers leave (within the first year) is that teaching, as a profession, has been slow to develop a systematic way to induct beginners gradually into the complexities of a job that demands hundreds of management decisions every day” (Paris 2010). The above statement made by the director of the reciprocal mentoring program at Edith Cowan University in Perth, Australia is one of many good opinions that portray a constant worry that is endemic in education, the fact that new teachers often do not survive or thrive.

When discussing mentoring, many varying ideas of what mentoring actually is can depend on whom one speaks to. When speaking towards pre-service teacher education, Hall, Draper, Smith, & Bullough Jr (2008) said that any clarity about what mentoring is, who mentors, how mentoring actually occurs is scarce. Though pre-service mentoring is not what this paper concerns itself with, the same thing can be said for the enigmatic and illusive idea of what mentoring actually is in faculty to faculty settings as well.

In 2007, the Australian House of Representatives started an inquiry into the fact that nearly 40% of their teachers were leaving their professions within the first five years of teaching. The House started looking into different types of mentoring programs in order to find one that would best help their current situation. As they studied and reached out to other countries such as the United States, UK, and Canada; they found that this was not a problem merely relegated to their country, but was of international significance (Andrew 2009).

Paris cites the fact that induction failure is the main reason for this high attrition rate (2010). She cites Ladd (2007) in showing that in the UK attrition figures are generally around 22% within the early years of teaching and that in a survey of over 1000 teachers leaving their profession, 45% of the respondents cited their reason for leaving as too much workload. As seen in the above quote, Paris does not believe that the workload is too heavy, but that the management skills of the new teachers are not good enough to manage the workload. She believes that reciprocal mentoring is the way to encourage teacher retention so that two professionals, one experienced and another not, will be able to share that workload until the inexperienced teacher grows into better management skills.

Another thing that obfuscates literature on mentoring is that there are so many different reasons that researchers are studying mentoring. Fletcher and Strong (2009) illustrate this point when they say "The majority of existing research on mentoring has focused on the impact of induction on teacher retention. Of greater interest is the potential impact on student achievement" (p. 329). Fletcher and Strong (2009) say that a majority of mentoring research focuses on teacher retention, but they give no statistical evidence of that. In reviewing other literature on mentoring, other factors have emerged.

Felder (2010) was interested in how mentoring affects race relations. Gasman, Hirschfield, & Vultaggio (2008) explored how mentoring affected African American attrition rates in graduate school settings and Thompson (2006) documented how well African Americans survived in Ivy League Universities. There are several motivations for studying mentoring.
Rockoff (2008) said that although teacher mentoring is now mandated in most states, high quality research in mentoring remains scarce. This statement lead Washburn-Moses (2010) to conduct her own study from the University of Miami in comparing how state and district policies compare with actual practice in General Education. In this paper by Washburn-Moses, we see yet another motivation for studying mentoring, this one being more political in nature. It was a paper meant to explore the gap between policy and practice and how we, as educators, could close that gap.

Hirsch agreed with Washburn-Moses when he said, "It is clear that good policy does not guarantee faithful program implementation, much less increased retention and improved teacher quality." (Hirsch 2009) This quote from Hirsch illustrates another difficulty with pinning down any clarity about mentoring and what it actually is, the fact that there are so many different opinions about what the problem with our current mentoring problems are.
This leads to the present study. We were examining what mentoring at a public university looked like. We believed that mentoring should not exist only to help the teacher/professor *survive* the first few years but also to <u>thrive.</u>

Complexities of mentoring in higher education. Mentoring serves a many-fold purpose. Mentors benefit from raised self-esteem and the chance to share ideas with others. In 1985 Glickman wrote that ". . . While teaching, teachers in most schools are invisible to each other and lack any concrete knowledge of what other teachers doing in the classroom. . . Little wonder, then, that most school faculties do not work well together." In 1988, Robbins added that we often make our mark on students but not on the profession. Mentoring gives us that chance.

One reason for mentoring is that learning to teach is a developmental process. While advanced degrees can prepare faculty in a greater understanding of their fields of specialization, conveying those understandings through the act of teaching can be a separate entity. It has been said that "Just because you do something does not mean that you can teach others to do it." Faculty who come to university teaching without backgrounds in instructional settings often find themselves in foreign territory. New faculty need guidance to get through the phases of pedagogical development without becoming frustrated.

One consideration in higher education mentoring is that the mentor should not be trying to create the protégé' in the mentor's own image. Sometimes mentors want the new professors to dress like them, talk like them, be interested in all the same things, *ad nauseum*. They sometimes even seem to want the protégés' to make the same mistakes in the classroom the mentors did! Mentors should not want their protégés' to be just *like* them. They should want their protégés' to become better than them. Mentors preserve protégé's individualities (Phelps & Cotton, 1989).

Roles, Relationships, and Responsibilities. A mentor is expected to be a friend first. This requires establishing a special relationship in which confidentiality is a major component. The mentor is also a facilitator and guide. The mentor is expected to be a wise, experienced teacher. The mentor should be prepared to model methods of teaching. She should be trained to observe and critique. She should be able to point out the good things an intern accomplishes as well as places where there is room for improvement. In these growth areas, she must have the skills to provide opportunities and nurture growth.

It takes a special personality to be a mentor. Someone who always speaks what she thinks or is insensitive is not likely to build the needed bond of trust with an intern. Effective mentors must be people oriented. He or she must be able to tolerate ambiguity and be able to vocalize the obvious without seeming to do so. A good mentor prefers abstract concepts. The mentor values both his own work and that of the protégé'. The mentor must also like and respect her peers as well as be liked and respected by them. She must be confident yet flexible. She must be caring and warm (K. Womack, 1990).

Role Transitions. Gray and Gray (1985) found that good mentors are people-oriented, that they tolerate ambiguity, prefer abstract concepts, value their company and their work, and respect and like their subordinates. The things that successful mentors do to make their protégés' successful in their first year of teaching include helping them gain self confidence, learn the technical aspects of their jobs, encourage creativity, help them to better understand the school's administration, and helped them work with people. They also found that the mentorship period had five stages:

1. initiation
2. development
3. disillusionment
4. parting
5. transformation

With the initiation stage comes what is called *the sparkle* in which the protégé' is so dazzled by the mentor that he tries to put forth the best image he can to impress the mentor. In development the mentor presents the information about the craft of teaching. Disillusionment is inevitable and happens when the protégé' realizes that, for all the teaching prowess that the mentor possesses, this prowess is still a finite amount and that the mentoring relationship will soon have little more to offer. In parting the protégé' becomes independent. This may or may not happen with bitterness. In transformation the mentor and protégé' can view each other as competent professionals in their own rights.

One useful thing about developmental descriptions such as these is that if the people involved know what is coming, they can prepare for it and be ready to make adjustments. If the mentor knows that eventually disillusionment will give way to independence, he or she can avoid getting feelings hurt when this new independence is asserted. Conflicts happen when the mentor is unwilling to let the protégé' make the step from disillusionment to parting, trying to hang on to the relationship because of the sense of power that the mentor is feeling during the developmental period. The mentor must be ready to let go. A professionally mature mentor
can view the protégé's new successes as being at least partly attributable to the mentor's efforts. This is better than trying to keep a protégé' under his or her wing forever (Phelps & Cotton, 1989).

A Position on Mentoring. Trying to live up to the expectation of perfection narrows the field of mentor applicants in a hurry. Nobody gets it right the first time, every time. One of the fascinating things about mentorships, as seen through the eyes of *protégés*', is getting to see how the mentor works his way out of a mistake once he has made it. Sometimes *protégés'* learn more from watching that developmental process than from observing carefully-retouched finished products.

One of us was asked by the university's chapter of the Student National Education Association to do a presentation on school law on a Thursday night at one of the local restaurants. The presentation was supposed to begin at 7: 30 PM. By 6: 30 the effort began to get the laptop to coordinate with a portable projector. The projector would show a test pattern, but would not communicate with the laptop. For 55 minutes there were re-boots, checking of all the connections, and more attempts to get the computer to send images to the projector. Five minutes before the time for the presentation to begin, a colleague who knew a critical fact about getting computers to "talk" to projectors arrived and revealed how to simultaneously press "Function" and "F8." *Viola!* There were pictures! Now the school law presentation for the 30-35 early childhood majors who had assembled could begin.

It was after the law presentation that the real lesson for the night was made apparent. "You know," one co-ed said, "Your presentation on school law was okay, and I learned from it," she said with a half-dozen of her friends gathering around. "But what we learned most tonight, from watching you work through 55 minutes of nothing but sheer failure, was how a professional deals with frustration. You never cursed; you never swore; you didn't beat up on the equipment; you didn't blame other people; you just kept trying with everything you knew how to do until help arrived. We learned far more from the 55 minutes *before* the presentation than from what came at 7:30. Thank you!" And then she and her six friends left.

Having them sit through the Power Point brought to them that night: Hopefully worth an hour of their time. Having them learn about professionalism under stress: Priceless. Un-intentional learning: If we mentor, un-intentional learning will occur. Count on it. Live right and it won't disappoint.

Sergiovanni and Starratt developed a concept of supervision (*Supervision: A redefinition, 8th ed,* 2007) that is closer to mentoring than the administrative concepts of the past. They combined the human relations supervisor concept and the human resources supervisor to increase school effectiveness while simultaneously increasing teacher satisfaction. This re-definition of supervision is a step closer to the concept of mentoring that is used in this paper. One difference in Sergiovanni and Starratt's application of leadership theory and the world of higher education faculty is that Sergiovanni and Starratt were focusing more on public school settings than on higher education. The cultural and social expectation for higher education faculty is that of more autonomy and independent decision-making because they are, or are presumed to be, among the most educated individuals in our society.

Purposes of the study

The purposes of the study were (1) to determine the extent of informal or formal mentoring occurring in a university of over 9,000 students, and (2) to determine needs for additional mentoring that might exist. Mentoring is a hand-in-hand relationship. Mentoring prepares a protégé' for the day when the mentor will not be there. Mentoring is about helping another human achieve independence. It is the opposite of enslavement--mentoring is about *freedom*. Mentoring is about a mentor showing someone information in the space of a minute that it took the mentor a year to learn.

Method

Participants

A questionnaire was made available to a five-year university faculty of 260 via QuestionPro. The survey was announced through the Office of Academic Affairs by email in April, 2010. This was during a busy time of the semester, and 46 faculty answered the survey. Of 46 who began the survey, all 46 completed it. It appeared from the 100% completion rate that the questionnaire did not contain items that were intrusive or offensive to respondents. The modest return rate may have been due to the time of the school year when data were collected. Table 1 depicts the academic disciplines of the respondents.

Table 1

Demographics of respondents

Academic discipline of respondent	Count	Percent of total respondents
Applied sciences	6	13.33%

Arts and Humanities	15	33.33
Business	2	4.44
Education	9	20
Natural and Health Sciences	12	26.67
Professional studies/community outreach	1	2.22
Total	46	100%

Table 2 shows respondents by academic rank and discipline. Two respondents did not answer the item about academic rank. The 46 questionnaires appeared representative of the colleges of the university, with the exception of the college of business; only one faculty member completed the survey. The number of faculty in the College of Business is approximately equal to that of the College of Arts and Humanities.

Table 2

Ranks and college affiliations of respondents

	Instructor	Assistant	Associate	Professor	Row Totals

		Professor	Professor		
Applied Sciences	17% (1)	50% (3)	17% (1)	17% (1)	13.64% (6)
Arts and Humanities	13% (2)	53% (8)	27% (4)	7% (1)	34% (15)
Business	0%	0%	0%	100% (1)	2.27% (1)
Education	11% (1)	22% (2)	44% (4)	22 % (2)	20.45% (9)
Graduate College	0%	0%	0%	0%	0% (0)
Natural & Health Sciences	8% (1)	58% (7)	17% (2)	17% (2)	27% (12)
Professional Studies	0% (0)	100% (1)	0% (0)	0% (0)	2.27% (1)
Column Total	5	21	11	7	44
Column Percent	11.36%	47.73%	25%	15.91%	100%

Note: This is 100% of those answering the "faculty rank" question. Two who otherwise answered the survey declined to declare their faculty rank.

Materials and procedures

It appeared from the 100% completion rate that the questionnaire did not contain items that were intrusive or offensive to respondents. The modest return rate may have been due to the time of the semester and school year when data were collected. The questionnaire sought information germane to the tenure and promotion process and also contained items about faculties' professional well-being. Percentages of faculty responding to the questionnaire, in comparison to the overall numbers and distribution of faculty across departments across campus, appeared to be proportional. All colleges of the university were represented (X^2 =11.208, p< 0.885) in the survey evenly. The Graduate College shares faculty with the undergraduate departments. As a distinct block of faculty, there appeared to be

no responses because they had already responded as members of their academic undergraduate disciplines.

The proportion of tenured to non-tenured faculty who responded to the QuestionPro survey appeared to be that expected, given the ratio of the whole population of faculty. A third group of faculty became apparent, those who were faculty but were not on a tenure track. Their responses were reported separately.

Results

The first objective of the study was to determine the extent of mentoring among those who had achieved tenured status and non-tenured faculty. When tenure status was used as an independent variable, there were no significant differences between the amount of mentorships experienced, the number or kind of mentorship activities experienced, or the benefits gained from mentorships (Table 3). Only 38 percent of faculty across all three statuses experienced anything that they recognized as a mentorship. About 25 percent had been assigned a mentor through administrative channels. The information gained during mentorships was more likely to relate to navigating the tenure/promotion process than to improving their teaching, improving their methods of assessing their students' learning, presenting or publishing scholarly works, writing grants, or becoming better known in professional circles. Among tenured, non-tenured, and non-tenure-track faculty, fortunately all three groups did not report anything happening to them during a mentorship that caused them to feel ethically uncomfortable.

Table 3

Responses of tenured and non-tenured faculty

Question	Tenured	Non-Tenured	Not tenure-track	
	% Yes	% Yes	% Yes	p

1. Upon becoming a new faculty member, did you experience any kind of mentorship?	32%	53%	27%	.306
2. Were you, when you were a new faculty member, assigned a mentor through administrative channels?	21%	40%	9%	.175
3. If you had a mentorship during the early time of being a faculty member, was your mentorship something that naturally evolved through your interactions with other faculty?	28%	36%	30%	.739
4. Did your mentorship include assistance in becoming a more effective teacher?	29%	31%	50%	.516
5. Did your mentorship include assistance in understanding university policy with regard to tenure and promotion?	47%	39%	56%	.728
6. Did your mentorship include activities specifically designed to help you gain tenure or promotion?	35%	23%	33%	.000
7. Did your mentorship include help in developing assessments in order to assess your university students' learning?	25%	17%	20%	.863
8. Did your mentorship include introducing you to, and building relationships with, other significant professionals in your academic discipline?	38%	46%	40%	.892

9. Did your mentorship include activities designed to help build your scholarly productivity?	35%	15%	50%	.203
10. In the sense of co-authoring, did your mentorship involve writing articles or doing research with your mentor?	25%	15%	20%	.815
11. Did your mentorship involve co-presenting at state, regional, or national, or international conferences?	25%	7%	10%	.377
12. Did your mentorship involve co-authoring grants?	13%	8%	10%	.937
13. Did your mentor help you gain membership in departmental or college-level committees?	38%	42%	30%	.850
14. Did your mentor help you gain membership in university-level committees such as Faculty Welfare, Curriculum Committee, or Faculty Senate?	21%	23%	30%	.883
15. Did your mentor ever do anything that made your feel uncomfortable, ethically?	0%	0%	0%	1.000

The data were also analyzed using academic discipline as an independent variable. The presence or absence of mentorship experiences was noted by faculty from all colleges. The trends of these data (Table 4) did not appear different from the trends when tenure status was the independent variable. The trend of having about one-fourth assigned a mentor during the early part of the faculty experiences was not uniform across colleges (X^2 =13.416, p<.037), favoring such assignments in the College of Arts and Humanities. No one in the College of Education reported that they had been administratively

assigned a mentor. Forty-five percent of respondents said that their mentorships naturally evolved, without administrative intervention. Across all colleges and disciplines, only 35% said that their mentorships involved helping them become better teachers; the quest for more effective instruction was not part of 65 percent of mentorships. In only 20 percent of instances did the mentorship include any advice to protégés about methods of assessing the work of their students. The inclusion of an understanding of university policy on tenure and promotion as part of the mentorship was part of the experience for 46 percent of faculty, with no significant differences between colleges. Assistance to protégés tended to be mechanistic and mainly centered upon the institution's faculty handbook, without leading toward the unleashing of protégés creativity or initiative.

Table 4

Participation in mentorships by College

"Upon becoming a new faculty member, did you experience any kind of mentorship?"

College	% Yes	% No	Row Totals
Applied Sciences	33% (2)	67% (4)	13.3% (6)
Arts and Humanities	27% (4)	73% (11)	33.3% (15)
Business	100% (2)	0% (0)	4.44% (2)
Education	44% (4)	56% (5)	20% (9)
Natural and Health Sciences	33% (4)	67% (8)	27% (12)
Professional Studies & Comm. Outreach	100% (1)	0% (0)	2.22% (1)
Column Total	17 Yes	28 No	45
Column Percent	37.78%	62.22%	100%

There were no significant differences in the propensities of colleges to involve junior faculty in activities designed to help them meet and befriend other, more established, professionals in their fields (X^2=5.637, p<.465). College of Education protégés, however, were much more likely to receive assistance in scholarly activity (Table 5). That assistance was more likely to take the form of offers to co-author or co-present (X^2=25.371, p<.000) in the College of Education or in the College of Business than in the other colleges.

Table 5
Mentorship activities involving scholarship, by college

"Did your mentorship include activities designed to help build your scholarly productivity?"

College	% Yes	% No	Row Totals
Applied Sciences	0% (0)	100% (6)	15% (6)
Arts and Humanities	18% (2)	81% (9)	27.5% (11)
Business	100% (2)	0% (0)	5% (2)
Education	67% (6)	33% (3)	22.5% (9)
Natural and Health Sciences	18% (2)	82% (9)	27.5% (11)
Professional Studies & Comm. Outreach	100% (1)	0% (0)	2.5% (1)
Column Total	13 Yes	27 No	40
Column Percent	32.5%	67.5%	100%

Overall, though, only 21 percent of protégés received any offers of co-authoring or co-presenting. Four out of five faculty were left to find their way on their own in the area of scholarship. When it came to actual co-presenting at state, regional, national, or international conferences, only 15 percent had that opportunity, almost all of them coming from the College of Education. Only eleven percent of the sample received any guidance on grant writing. Forty-one percent of the respondents were of senior rank (*e. g*., associate or full professors) as they reflected upon their first few years of university-level teaching. Across all colleges, 37 percent had assistance from their mentors in being appointed to departmental or college committees, and 24 percent had assistance in being seated on university-level committees such as the faculty welfare committee, university curriculum committee, or faculty senate.

Examination of the data using professorial rank as an independent variable revealed almost no changes to the trends already noted. Only 18 percent of associates and 29 percent of full professors had the benefit of any kind of recognizable mentorship to help guide them through the probationary period. Four out of every five also had to find their own mentors, if they were able to, and one-third obtained mentors through social circumstances that naturally evolved. Only 11 percent of associates and 29 percent of professors received any memorable help with the dynamics of university-level classroom teaching. Interestingly, 71 percent of professors received help understanding the university policies

regarding tenure and promotion, which may explain why they survived in academia as long as they did. By a ratio of more than two to one, professors had had the benefit of activities designed to help them gain tenure and promotion, compared to assistant or associate professors. Professors were more than four times as likely (57 percent to 12.5 percent) to have received help in meeting significant others in their profession in order to network. Professors were more than twice (57 percent versus 21 or 22 percent) as likely to have had help with their scholarly productivity than assistant or associate professors. Full professors were significantly (X^2=7.895, p<.048) more likely to have benefitted from offers to co-present at conferences than were instructors, assistants, or associates (50% for full, 0% for instructors, 5% for assistants, 22% for associates). The same linear trends existed in getting help with placement in departmental, college, or university-level committees.

Discussion, Conclusions, Recommendations

It could be easy for readers to be dismissive of the data in this study. It would be very easy for one of the authors to be dismissive of it because of his rank as full professor. The data seem to indicate a "rich get richer, poor get poorer" portrayal of life at a particular university. The fact that 46 professors out of approximately 260 answered a questionnaire might offer opportunity for such a dismissal. But there are two problems with a perfunctory dismissal of these findings—two problems that senior professors would be well acquainted with:

1. The "end of the semester time crunch" (when these data were obtained) came evenly to *all* academic disciplines and colleges. All faculty have obstacles to overcome as they strive to bring a semester to a close. To claim that some faculty did not answer the questionnaire because they were overcome with end-of-semester chores is to resort to stereotyping.

2. The repeated usage of chi square to objectively quantify proportionality eases objections that the sample was not random. It was proportionate among itself, and was proportionate to the faculty from which the sample came. All colleges, faculty ranks, and tenure statuses were proportionately represented.

The last data reviewed indicated that senior faculty were the recipients of much more mentoring during their early years of teaching in higher education than those coming into the field more recently, especially in activities related to promotion and tenure. There was a sharp division between the resources experienced by full professors and those available to associates, assistants, instructors, and faculty hired in non-tenure-seeking positions. From this statistic, we suggest that senior ranked professors need to make themselves more available to their less experienced department members. The contemporary phrase "Giving back" comes to mind in reflecting upon these data. Senior faculty need to give protégés the opportunities they were been given two or three decades previously. University life should not perpetuate inequalities if faculty are going to teach that education creates opportunities and overcomes disparities. When today's assistants and associates are leading their universities within a few short years from now, they need to have had the benefits of everything the last generation of full professors had.

It can be asked if the apparent lack of mentorship of new professors has to do with the seeming change in higher education in general. Higher education seems to be moving to a system concerned primarily with promotion, publications, and tenure. It is moving toward a narcissistic system that is concerned with self-achievement more than about creating a united team for the purpose of fostering student learning. While publications and large numbers of tenured faculty may be helpful with accreditations and outward public appearances, perhaps this mentality promotes an individual to have a self-serving attitude which results in less willingness to act with a team mentality and help our less experienced professors learn.

Our research clearly supports that there is a lack of mentorship occurring for individuals coming into the field of higher education. These educators are "left to the wolves" to learn how to work best with the students in their university, prepare for tenure, publish, make presentations, and learn everything else that is part of becoming the best professor that they can be. Researchers in other parts of the world are tackling this issue and the issue of mentoring in general. Perhaps now is the time that American universities begin to tackle this issue on their own.

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