

## SOCIALIZATION OF DOCTORAL STUDENTS TO ACADEMIC NORMS

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Using the framework for graduate and professional student socialization developed by Weidman, Twale, and Stein (2001), this study addresses socialization of doctoral students to the academic norms of research and scholarship. Data are presented about the perceptions doctoral students in a social science discipline (sociology) and in educational foundations at a major research university have of the scholarly and collegial climates of their departments. Data on students' social relationships with faculty and peers as well as their reported participation in scholarly activities are also reported. A multivariate analysis provides support for the framework, affirming the importance of social interaction among both students and faculty as well as collegiality among faculty for creating a supportive climate for doctoral study that also has the potential to provide a strong foundation for subsequent academic and/or research careers by stimulating students' research and scholarly productivity.

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**KEY WORDS:** graduate students; doctoral students; socialization; faculty impact; departmental climate; academic norms; scholarly research.

### INTRODUCTION

During the last 5 decades, there has been a continuing interest in the socialization of individuals to beginning levels of practice in a professional role (Baird, 1990; Becker, Geer, Hughes, and Strauss, 1961; Bragg, 1976; Bucher and Stelling, 1977; Lortie, 1959, 1975; Merton, Reader, and Kendall, 1957; Smart and Hagedorn, 1994). More recently, an update and conceptual expansion of Bragg's work by Weidman, Twale, and Stein (2001) as well as a literature review by Antony (2002) represent the continuing interest in this subject.

Since a central purpose of postbaccalaureate education is to prepare individuals for learned roles in society, knowing the relationship between the educational experience and expected outcomes is of great importance to academic institutions. The present study continues in this tradition of research on professional

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socialization by exploring preparation for the scholar role, that is, the preeminent role assumed by individuals who have earned the doctor of philosophy degree. It looks at socialization to the scholar role rather than at commitment to a scholarly discipline (Ondrack, 1975) and uses survey research methods to explore the relationship between perceived characteristics of the faculty and peer climate in doctoral students' academic departments and their scholarly orientations. A definition for the scholar role is presented to establish its theoretical relationship with the postbaccalaureate educational experience, suggesting ways in which the academic department socializes graduate students to both the student and the scholarly roles as well as characteristics of the academic department that have an impact on doctoral students.

The various dimensions of the scholarly role and of scholarly practice have been discussed by a number of sociologists (Bowen and Schuster, 1986; Finkelstein, 1984; Light, 1974; Weidman et al., 2001). Light has defined a scholarly profession as "an occupation with the attributes of a profession whose core of activity is the advancement of knowledge" (p. 11). For an individual to be included in the ranks of the scholarly professions implies the possession of a "license to practice" (a Ph.D. or its equivalent), membership in appropriate professional organizations, and the actual practice of the profession, that is, the advancement of knowledge (Light, 1974, p. 14).

The precise nature of scholarly practice has received a moderate amount of attention in the literature. However, the majority of the literature focuses on the behavior of one segment of the scholar role, that of the faculty in higher education, and debates the relative importance of teaching and research in the academic role (Bowen and Schuster, 1986; Finkelstein, 1984). Light claims that the university faculty role and scholar role do not necessarily coincide. His analysis encourages us to go beyond a definition of the scholar role limited to the higher education faculty in order to reflect on the activities and practice of the scholar role as a whole. An example of a broader conception is provided by the following definition: "Scholarly work, which is composed of varied professional activities, is that form of work which involves the application and use of knowledge and skill acquired through and certified by doctoral research training" (Braxton and Toombs, 1982, p. 267).

A central purpose of postbaccalaureate education, particularly at the doctoral level, is the socialization of individuals into the cognitive and affective dimensions of social roles related to the practice of learned occupations. Through socialization, novices "acquire the values and attitudes, the interests, skills, and knowledge, in short the culture, current in the groups of which they are, or seek to become a member (Merton et al., 1957, p. 287). A primary outcome of socialization is that the individual accepts, internalizes, and acts as though the prevailing norms of the role to which he or she is aspiring "has validity for him" (Clausen, 1968, p. 8). Because professional roles are of particular importance to

society, an understanding of the ways in which individuals are prepared for them is especially important.

The present research draws on the framework for graduate and professional student socialization developed by Weidman et al. (2001), which is based on Weidman's (1989) framework for undergraduate socialization in an effort to subject several of its elements to an empirical test (Weidman et al., 2001). This framework represents the passage of individuals through the stages of professional socialization. It reflects the prospective graduate students' characteristics, including personal (ethnicity, gender, social and economic status) and educational background as well as predispositions (values and expectations) related to the motivation to pursue a career in the educational leadership profession. It also represents the outcomes of successful professional socialization (knowledge, skills, values such as commitment to and identification with the educational leadership profession).

At the core of this framework is the institutional environment of the university community or other higher education institution in which professional preparation occurs. It includes both academic and peer culture as well as three mechanisms of socialization: interaction with others, integration into or sense of fit with the expectations of faculty and peers, and learning of knowledge and skills necessary for effective professional practice. The core socialization experience resides in the graduate program under the academic control of faculty within the institutional culture.

The framework also recognizes that, because universities are not encapsulated environments, graduate students experience communities with simultaneous, concomitant influences. These include professional, higher education institutional, and personal communities in which graduate students participate during the course of earning a doctoral degree. The process of socialization is not regarded as linear but as seamless, fluid, dynamic, interactive, evolving, and permeable (Weidman et al.). The experience by graduate students of personal and professional communities in an interactive environment encourages mutual exchange in higher education and job environments as well as with family members and friends in other settings.

The preparation of doctoral students for the scholar role is a type of adult occupational socialization (Miller and Wager, 1971; Mortimer and Simmons, 1978). Generally, socialization in this sense is "the process by which persons acquire the knowledge, skills and dispositions that make them more or less able members of society" (Brim and Wheeler, 1966, p. 3). In postbaccalaureate study, the cognitive dimensions of a role are transmitted through didactic instruction (Thornton and Nardi, 1975) and assigned textual material; the normative context and interpersonal relations among an academic department's members socialize individuals to relevant occupational norms (Brim and Wheeler, 1966).

The cognitive and affective dimensions of the professional role differ in the extent to which they are reflected in the organizational structure of an academic department. The cognitive dimensions (knowledge and skills) of a role are clearly evident in the goals of the academic department. The affective and integrative aspects of the socialization process are less formally expressed (Merton, et al., 1957; Rosen and Bates, 1967). The formal elements of socialization tend to be "written, listed, stated directly and explicitly" (Thornton and Nardi, 1975, p. 876) and are associated with course requirements, the grading system and minimum grade requirements, preliminary and comprehensive examinations, and the eventual certification of knowledge (competence) by the granting of an academic or professional degree. It is clear that the cognitive dimensions of the professional role are closely related to the requirements of the student role. A student is required to demonstrate cognitive competence by earning acceptable grades and passing examinations, while the novice professional needs extensive knowledge as a basis for professional practice and authority (Friedson, 1986).

The relationship between knowledge and professional practice is usually implied rather than stated, however, and there are few organizational policies relative to their transmission. The socialization of a novice to effective role dimensions and the integration of knowledge with professional practice has less to do with the formal structure or explicit goals of a department than with the general climate established by informal contact between faculty and students (Becker et al., 1961, p. 81ff; Merton et al., 1957, p. 41; Pease, 1967; Sherlock and Morris, 1967).

Several factors have been associated with students' perceptions of the organizational climate of a department and thus with the socialization of doctoral students to the affective dimensions of the scholar role. First, Merton (1957) identified the importance of a distinctive environment (p. 164), an environment in which professional norms are clear and about which participants agree. Second, socialization requires opportunities for both formal and informal interactions between faculty and students (Merton et al., 1957, p. 287; Pease, 1967; Weidman, 1979). Third, socialization to professional norms is enhanced by a noncompetitive, supportive environment in which the faculty are committed to the students' success (Antony, 2002; Katz and Hartnett, 1976, p. 59ff).

A fourth factor, closely associated with the third, is the extent of conflict between the student role and novice professional role. When an individual perceives tension between achieving as a student (i.e., receiving good grades) and beginning to do scholarly work, he or she is more likely to fulfill academic requirements, both because those requirements have been made clear in the policies of the department and because achieving academic success is necessary before one can be certified for beginning professional practice (Olesen and Whittaker, 1968).

Because socialization is a developmental process, and because anticipation of

the future role is part of the process (Thornton and Nardi, 1975), graduate students can be expected to participate to some extent in scholarly activities. For example, Bucher and Stelling (1977) found that commitment to the norms of the anticipated professional role resulted in participation in the role behavior while still in school. Similarly, Cresswell (1985) found that one of the best predictors of participation in scholarly activities among faculty was demonstrated scholarly productivity while still in graduate school.

This research examines the relationships among an academic department's informal structures and the socialization of doctoral students to the scholar role as reflected in their level of participation in scholarly activities. The literature suggests that a doctoral student's perceptions of departmental support for scholarship and of the faculty's orientation toward scholarship will have an impact on his or her participation in those activities. It further suggests that departmental climate influences students through their interactions with faculty and that normative expectations that are clearly held by the faculty and about which there is consensus are most readily transmitted.

It is expected that the perception among graduate students that faculty are engaged in and encourage scholarly activities will result in participation in such activities by doctoral students. Further, it is expected that doctoral students will perceive a department as supportive when there is a collegial environment characterized by frequent student-faculty interaction, mutual respect among faculty and between faculty and students, and the encouragement of student scholarly aspirations.

## STUDY DESIGN

Data were gathered by means of a mailed questionnaire. All data analysis was done with the PC version of SSPS: Statistical Package for the Social Sciences. Data reduction was accomplished by scaling sets of related items identified as being related to one another both conceptually and through exploratory factor analysis. Relationships among variables were assessed by correlation and multiple regression.

## Sample

The questionnaire was sent to all 83 active Ph.D. students enrolled in two departments in a major public research university that is a member of the Association of American Universities: 40 in the Department of Sociology and 43 in the Educational Foundations Program housed within the School of Education's Department of Educational Policy and Administration. These two departments were chosen to enable a comparison between students enrolled in a professional school department whose doctoral students in Educational Foundations were

required to take courses in the humanities and social sciences (including sociology) as part of their “supporting field” requirement and a related disciplinary department in the arts and sciences. Students in the Department of Educational Policy and Administration specializing in the sociology of education are encouraged to take a master’s degree in the Department of Sociology.

Completed questionnaires were received from 26 sociology Ph.D. students (a 65% return rate) and 24 educational foundations Ph.D. students (a 56% return rate). The distribution of respondents by gender (70% male) and nationality (58% foreign) was representative of the Ph.D. student population in each department, but both figures are considerably larger than the national averages. There are so many foreign students in the Educational Foundations Program because it includes a distinguished concentration in comparative and international education.

Of the respondents, 66.7% already had earned advanced degrees (primarily the master’s), and 35% were currently at the dissertation stage of study. All had completed at least one academic year of graduate study in their current department. A third of the respondents from each department aspired to careers as professors. Just over 25% of the sociology doctoral students indicated they wished to become researchers. About 15% of the educational foundations students wanted to be consultants, a common aspiration among those specializing in comparative and international education.

The median length of time since enrollment for sociology students was three academic years, compared with two academic years for students in education. The reason for this difference is that most sociology Ph.D. students tended to come to graduate school directly from their undergraduate institutions, whereas educational foundations Ph.D. students tended to have earned a master’s degree and had some employment experience prior to their enrollment in the doctoral program. This pattern was reflected in the median age of the Ph.D. students enrolled in each department: 34 years in sociology and 39 years in educational foundations. Doctoral degrees had been received by 19% of the respondents during the academic year in which the survey was conducted and 50% more were planning to graduate within two academic years.

### Questionnaire

The survey questionnaire consisted of items designed to assess departmental characteristics that have been identified as being important elements in the socialization of graduate students. Some items were adapted from the 1969 National Survey of Faculty and Student Opinion sponsored jointly by the American Council on Education (ACE) and the Carnegie Commission (Trow, 1975), an index of scholarly activities developed by Braxton and Toombs (1982), and a questionnaire used for graduate program reviews at the research university

where the present study was conducted. In addition, several items were developed specifically for the questionnaire.

### Variables

Six composite variables were identified for the research: participation in scholarly activities, student–faculty interactions, student–peer interactions, supportive faculty environment, department collegiality, and student scholarly encouragement. In addition, there were two dummy variables: citizenship (foreign country other than the United States) and major department (educational foundations). There were no significant differences by gender in the variables under investigation so it was not included in the analysis.

#### *Participation in Scholarly Activities*

This scale included 11 items for which respondents were asked to “Check any of the following activities in which you are/were involved while enrolled as a student in your department.” Scale scores were simply the sum of checks to the 11-item set and ranged from 1 to 10 (mean = 4.14, s.d. = 2.84). Table 1 shows the items included in this scale along with the rate of reported participation in each one of the activities.

**TABLE 1. Variable: Participation in Scholarly Activities**

Item	Rate of Participation (%)
Been asked by a fellow student to critique his/her work	54.5
Held membership in a professional organization	52.7
Asked a fellow student to critique your work	52.7
Attended convention of a professional organization	50.9
Performed research of your own which was not required by your program or studies	40.0
Called or written to a scholar at another institution to exchange views on scholarly work	40.0
Written, alone or with others, a grant proposal	29.1
Authored, alone or with others, an unpublished manuscript (not part of a course)	27.3
Authored, alone or with others, a paper <i>submitted</i> for publication	23.6
Presented a paper at a conference or convention	16.4
Authored, alone or with others, a paper <i>accepted</i> for publication	14.5

Alpha = .77.

The items in this scale were selected from a list of faculty scholarly and research activities identified by Braxton and Toombs (1982) and adapted for the present study by changing wording to reflect a doctoral student as opposed to a faculty referent. Items represent a range of activities that could reasonably be expected of a doctoral student, including those who are not aspiring to an academic and/or research career. In their original study, Braxton and Toombs claimed that scholarly activities formed a discrete category of faculty work that was different from research. Scholarly activities were classified into two domains: External Disciplinary–Colleague Domain (extramural lectures, ancillary disciplinary writings, disciplinary reading, informal communication with colleagues, and disciplinary association activities), and Institutional Local-Community Domain (public talks and lectures on current disciplinary topics, institutional-departmental activities, course content and activities, public service activities, and public disciplinary writings). In the present research, however, the scale that included responses for both research and other scholarly activities was more robust than scales that included only those items reflecting a single type of activity. This suggests that the graduate students in the present study have not yet developed the differentiated research and scholarly roles characteristic of the faculty in the Braxton and Toombs study.

Table 1 shows that critiquing of each other's papers and participation in professional associations, cited by half of the respondents, were the most frequent scholarly activities reported. Less than one in five respondents either presented at a professional conference or authored a published paper.

#### *Student–Faculty and Student–Peer Interactions*

The set of items used to indicate a student's interactions with faculty and peers were adapted from the undergraduate questionnaire used in the 1969 ACE-Carnegie Commission surveys (Trow, 1975). Respondents were asked to indicate yes or no to a group of four items with the following stems: "Is there any professor in your department with whom you" and "Is there another student in your department with whom you?" These items were originally designed to incorporate both frequency and intensity of interaction, dimensions reflected in the findings of several researchers (e.g., Katz and Hartnett, 1976; Weidman, 1979) that the frequency and content of interactions between students and significant others has an impact on the students' integration into the academic community and eventual identification with and commitment to a professional role.

Table 2 shows the individual items and the response frequency for each one. Scale scores were obtained by summing the number of yes responses across each 4-item set. Scores ranged from 0 to 4 on both student–faculty interactions (mean = 2.84; s.d. = 1.25) and student–peer interactions (mean = 3.42; s.d. = 1.13).



**TABLE 2. Variables: Student-Faculty Interactions and Student-Peer Interactions (in percentages)**

Item	Rates of Interaction	
	Student–Faculty	Student–Peer
Sometimes engage in social conversation	83.6	90.9
Often discuss topics in his field	69.1	85.5
Often discuss other topics of intellectual interest	69.1	85.5
Ever talk about personal matters	65.5	81.8

Alpha: Student-Faculty = .64; Student-Peer = .81.

The most frequent type of student interaction with both faculty and peers was social in nature; the least frequent was personal. In general, students interacted more frequently with peers than with faculty, suggesting that if interaction with others in the same or reciprocal roles is an important means of transmitting climate, students may be influenced more by their peers and the student subculture than by faculty.

Three indicators of departmental climate were constructed for the analysis. Most of these items were developed and pretested specifically for the present research, although a few were adapted from a questionnaire used for the purpose of program evaluation at the university where the study was conducted. Items are similar to those found in questionnaires and interview schedules used in previous research on the socialization of graduate students (Becker et al., 1961; Merton et al., 1957; Trow, 1975). Table 3 shows the items included in each of these three indicators.

#### *Supportive Faculty Environment*

Students were asked to indicate their level of agreement (on a 5-point continuum, with 1 the lowest and 5 the highest) with statements having to do with the perceived departmental faculty climate. The stem for this item was: "For each of the following items, circle the number on the scale that most nearly expresses your level of agreement." There are seven items in this variable. The individual items ask students to express the extent of their agreement with statements concerning ways in which faculty members collectively participate in the socialization of graduate students. This scale reflects the departmental faculty's support for scholarship and for the potential of faculty to act as role models for students. Scale scores were derived by summing responses over the 7-item set and ranged from 1 to 31 (mean = 21.52; s.d. = 5.65).

**TABLE 3. Variables: Department Climate***Supportive Faculty Environment*

I identify more with my professors than with my fellow students.

This department emphasizes engaging students in scholarly activities (research, writing other than dissertation/thesis, etc.).

The faculty are accessible for scholarly discussions outside of class.

I feel free to call on the faculty for academic help.

My department offers sufficient enrichment activities (seminars, colloquia, social events, etc.) in addition to regular classes.

The faculty are aware of student problems and concerns.

I can depend on the faculty to give me good academic advice.

*Department Collegiality*

I am treated as a colleague by the faculty.

The faculty see me as a serious scholar.

The faculty seem to treat each other as colleagues.

*Student Scholarly Encouragement*

An environment that promotes scholarly interchange between students and faculty.

An environment that fosters and develops scholarly self-confidence in students.

An educational climate that encourages the scholarly aspirations of all students.

Sufficient opportunities for students to participate in the scholarly activities of the faculty.

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Alpha: Supportive Faculty Environment = .84; Department Collegiality = .71; Student Scholarly Encouragement = .80.

*Department Collegiality*

This three-item variable reflects the extent to which an academic department is perceived by graduate students as being a community of scholars, characterized by cooperation and mutual respect. Instruction and response options were the same as those for the variable Supportive Faculty Environment. Scale scores ranged from 3 to 15 (mean = 10.08; s.d. = 2.82).

*Student Scholarly Encouragement*

This variable was constructed from a set of four questions that assessed aspects of the departmental student climate that represent departmental goals or values. The items in this variable represent characteristics of a department that reflect an interest in scholarly activities. Respondents were asked to: "Please indicate how true each one is (or seems to be) in *your* department." Options (and their scores) were very true (3), somewhat true (2), or not true at all (1). Scale scores were calculated by summing responses over the four-item set, with scores ranging from 4 to 11 (mean = 6.94; s.d. = 1.99).

## RESULTS

For the primary data analyses, scale scores were constructed by summing the scores on all items comprising each variable. Cross-tabulation was done to assess the extent to which the departments were similar to each other in identified composite variables and dummy variables for gender (female) and nationality (other than the United States). No significant differences were found, nor were significant relationships found between major department and student scholarly encouragement, supportive faculty environment, department collegiality, or student–faculty interactions. However, student–peer interactions were found to be significantly lower in educational foundations than in sociology ( $\chi^2 = 11.80$ ,  $p < .05$ ). This is most likely due to the larger number of part-time doctoral students in educational foundations.

Table 4 shows the correlations between the six composite and two dummy variables. Doctoral students' perceptions of being in a department characterized by student scholarly encouragement and membership in the educational foundations department were significantly associated with students' participation in scholarly activities. Perceptions of being in a supportive faculty environment and departmental collegiality were significantly associated with student scholarly encouragement. Perceptions of being in a supportive faculty environment were significantly associated with collegiality among the departmental faculty and student–faculty interactions. These findings support the Weidman et al. (2001) conceptualization suggesting that the departmental climate, including normative consensus among faculty, has a strong socialization potential in the transmission of scholarly norms through social interaction among faculty and students.

Worth mentioning is the absence of significant correlations between participation in scholarly activities and most of the variables that are generally associated with effective socialization. For example, it would be expected that student–

**TABLE 4. Correlations Among Variables (N = 50)**

Variables	1	2	3	4	5	6	7
1. Participation in Scholarly Activities							
2. Student Scholarly Encouragement	.25*						
3. Supportive Faculty Environment	.11	.67*					
4. Departmental Collegiality	.07	.46*	.66*				
5. Student–Faculty Interactions	.23	.21	.46*	.35*			
6. Student–Peer Interactions	.10	.08	.07	.12	.16		
7. Nationality (non-USA)	-.10	-.08	-.17	-.08	-.32*	-.01	
8. Department (Educational Foundations)	.31*	.05	.22	.17	.16	-.29*	.17

\* $p < .05$ .

faculty interactions, a variable that represents a means by which scholarly norms are transmitted, would be correlated with scholarly activities. While the correlation was almost as high as the one with student scholarly encouragement, it was not statistically significant.

The significant negative correlation between student–faculty interactions and being from a country other than the United States, suggests that foreign graduate students are more reticent about interacting with faculty than are their American peers—at least in this particular university. The significant negative correlation between student–peer interactions and majoring in educational foundations may be due to the large number of part-time doctoral students in the department.

A central purpose of this research was to identify climate dimensions of academic departments that promote the socialization of doctoral students to academic norms. To that end, the scores for participation in scholarly activities and supportive environment were regressed on all other composite variables along with dummy variables for nationality (other than the United States) and major department (educational foundations). Variables were entered hierarchically with dummy variables first, followed by faculty climate variables (department collegiality and student–faculty interactions) and then student climate variables (student scholarly encouragement and student–peer interactions). Table 5 shows the regression results.

Only one variable reached significance when participation in scholarly activities was the dependent variable, major department (educational foundations). While student scholarly encouragement had a significant zero-order correlation with participation in scholarly activities, it did not reach significance when entered into the regression equation. The finding that being a Ph.D. student in educational foundations reached significance, suggests a difference between the

**TABLE 5. Standardized Regression Results (beta coefficients)**

	Participation in Scholarly Activities	Supportive Faculty Environment
Department (Ed. Foundations)	.36*	.09
Nationality (Non-USA)	.01	-.01
Department Collegiality	-.20	.36*
Student–Faculty Interactions	.15	.23*
Student Scholarly Encouragement	.28	-.02
Student–Peer Interactions	.18	.45*
Multiple <i>R</i>	.47	.82*
<i>R</i> <sup>2</sup>	.22	.67

\**p* < .05.

departments in doctoral students' perceptions of their department faculty being actively engaged in scholarly activities and of the faculty's expecting and encouraging similar behaviors from students. This is a bit surprising since equal numbers of doctoral students in both departments aspire to become professors, but more in sociology aspire to careers as researchers. However, in this particular educational foundations program, the research productivity of the faculty is high, and students are strongly encouraged to join professional associations and prepare papers for presentation at professional conferences.

To understand better the correlates of a supportive departmental climate, this composite variable was regressed on all other variables. Three reached significance: student scholarly encouragement, department collegiality, and student–faculty interactions. This suggests departmental support for participation in scholarly activities represents a general norm about preparation for the scholar role and the ability and inclination to participate in scholarly activities as an expected outcome of doctoral education that can be enhanced by a collegial departmental environment with frequent student–faculty interactions.

## DISCUSSION

A central purpose of this research was to identify perceived informal structures of the climate in academic departments associated with the socialization of doctoral students to the scholar role. The findings suggest that the socialization of doctoral students to the scholar role is directly related to student perceptions of departmental faculty encouragement for students' engaging in such activities. These findings support claims (Thornton and Nardi, 1975; Weidman et al., 2001) that the general climate of an academic department has an important impact on the socialization of students. An orientation toward scholarship is characterized by faculty who are accessible to students, who are actively engaged in scholarly activities themselves, and who clearly convey expectations and encouragement for students engaging in such activities. The findings further characterize an environment oriented toward scholarship as one that is perceived to be a community of scholars where the faculty treat each other and the students as colleagues.

There are several ways in which a department can foster doctoral student socialization. By making clear that the ultimate goal of the department is to prepare scholars, an environment can be established that fosters collegial relationships and encourages participation by doctoral students in scholarly work. For example, an assignment to prepare a project proposal or to write an article suitable for publication in conjunction with other doctoral students highlights the importance of real scholarly activities and could encourage cooperation rather than competition between students. Also, colloquia in which students are

both presenters and discussants could foster collegial relationships among the students.

Further, specific and concerted efforts could be made to emphasize the faculty's responsibility for the socialization of doctoral student to the scholar role. By including students in their research and other scholarly activities, faculty could show how knowledge gained as a student is used in professional practice and could demonstrate appropriate normative behavior of individuals in the scholar role (Weidman et al., 2001).

Several suggestions for future research on the impact of departmental structure on doctoral student socialization can be identified. First, the departmental characteristics that affect socialization could be assessed directly rather than relying on students' perceptions of them. Second, an effort could be made to refine the measure of student participation in scholarly activities. Third, an effort could also be made to establish more clearly the relationship between the scholar and student roles. Fourth, further research might identify other elements of the departmental climate that affect socialization.

This research assumed that the students' perceptions of departmental goals and values were those actually established or held by the department. There are two additional ways of measuring/assessing a department's goals, one quantitative and the other qualitative. The value faculty place on scholarly activities can be assessed by reviewing their scholarly productivity, course syllabi, and written policy statements. Alternatively, an ethnographic study of a department could collect data about the departmental climate in order to ascertain the messages students are given relative to the importance of grades, research projects, and so forth. Such a study could also provide data about the nature and content of all role relationships and interactions. This qualitative data would enrich our understanding of the socialization of doctoral students. Either type of data could have been helpful when interpreting the results of the current research where it was found that majoring in education was related to participation in scholarly activities.

Although the departments surveyed are arguably representative of academic departments in the United States, we are uncertain of certain idiosyncratic characteristics of the departments. For example, is the relatively high number of joint faculty appointments in educational foundations characteristic of professional schools generally? An effort could be made to gain evidence for claiming that the academic departments differ from others in certain important ways that were responsible for the current findings.

Further efforts could be made to refine the measure of doctoral student participation in scholarly activities. The items used were selected to be representative of activities in which a student could reasonably be expected to participate. However, there might be other activities that should have been either included or eliminated because they are department- or discipline-specific. For example,

whether or not a department provides funds for student travel to conventions and the location of those conventions during the years when a particular cohort of students might attend, could have an impact on student participation. Reasons for not attending a convention could be financial rather than a lack of professional commitment. Efforts could also be made to gather qualitative data about the students' perceptions of the various dimensions of the scholar and student roles. Do students perceive tension between the roles? What attempts are made to resolve any conflict?

Finally, further study of academic departments could reveal elements of the climate, other than those identified in this research, that have an impact on the socialization of doctoral students, including exploration into the reciprocal effects of students on their departments (Antony, 2002). For example, the arrangement of student and faculty offices and how they are utilized may speak to the scholarly values held by the faculty and to the means by which they are communicated to the students. In conclusion, this research has continued the tradition of earlier research on professional socialization by exploring the socialization of doctoral students to the scholar role, providing empirical support for several dimensions in the conceptual framework developed by Weidman et al. (2001). It shows a clear relationship between the normative context of an academic department and doctoral student participation in activities representative of the scholar role, affirming the importance of social interaction among both students and faculty as well as collegiality among faculty for creating a supportive climate for doctoral study that also has the potential to provide a strong foundation for subsequent academic and/or research careers by stimulating students' research and scholarly productivity.

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