Professional Socialization for the Ph.D.: An Exploration of Career and Professional Development Preparedness and Readiness for Ph.D. Candidates

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This study sought to uncover the career readiness and professional development needs of Ph.D. students at a large, Midwestern research university. Findings indicate that career goals of graduate students change over time, skill preparation for academic and non-academic careers continues to be inadequate for many students and professional development and career guidance is lacking for many graduate students. Unlike other studies of graduate student professional socialization, this study introduces the theory of Academic Capitalism and its impact on the career and professional development of doctoral students.

In a time when tenure track faculty positions are becoming increasingly difficult to obtain, increased attention is being given by faculty advisors and graduate student administrators to the education and professional preparation of Ph.D. students. Since the 1980’s, decreases in funding for higher education have forced many institutions to reduce permanent positions, cut research budgets, and increase faculty workload (Finkelstein, Seal, & Shuster, 1998; Rhoades & Slaughter, 1997). Throughout history, in response to ongoing financial shortfalls, universities have continually sought to adjust by seeking new sources of funding (Slaughter & Leslie, 1997) and by reallocating internal resources to academic units thought to be revenue producers for better market competition (Hackman, 1985; Slaughter & Rhoades, 2004; Slaughter, 1993; Volk, Slaughter, & Thomas, 2001). This market effect created dynamics which led faculty to compete for external funding that was increasingly tied to the market. This entrepreneurial turn towards increased “academic capitalism,” can be understood as, “emphasizing the utility of higher education to national economic activity on the part of the faculty and institutions” (Slaughter & Leslie, 1997, p.33).

The movement towards increased academic capitalism and entrepreneurialism is problematic for academic professionals and graduate students because it requires the collective action of the university as a whole, altering beliefs and values along the way and ultimately creating tension and dissonance for those working in higher education. Faculty members are sometimes uncomfortable with the practices of their institutions and many national professional associations in these instances have often produced guidelines that caution against approaches that do not prioritize the needs of students (Slaughter & Rhoades, 2004). Rhoades and Slaughter (2004) further suggest that the financial and economic interests of institutions are being prioritized over the interests (codes of ethics) of the professionals and their clients (in this case students). These changes have transformed the composition of the academy’s faculty and the nature of academic work (Shuster & Finkelstein, 2008) and have impacted the education, learning, and training of graduate students. Over the past decade, researchers have examined the formal and informal professional socialization process that doctoral students undergo as they pursue the doctorate and the various issues students encounter while pursuing the Ph.D. (Austin & Barns, 2005; Golde & Dore, 2001; Tierney & Bensimon, 1996; Weidman, Twale, & Stein, 2001; Wulff & Austin, 2004; Wulff, Austin, Nyquist, & Sprague, 2004). These professional socialization issues and challenges are based largely on a shrinking academic job market; the knowledge, ability, and skills that employers of advanced degree holders seek; and the socialization and training for the future “stewards of our disciplines” (Golde & Walker, 2006). Research on the professional socialization for academic positions suggests that some graduate programs may not be adequately preparing students for the realities of faculty life (Adams, 2002; Austin, 2002; Olsen & Crawford, 1998) or is not preparing students for the needs of a changing work force (Nyquist & Wulff 2000). Historically, preparation at the doctoral level included providing...
students with extensive research training but this training may not include professional preparation in teaching and advising, the publication process, writing and attaining research grants, or understanding professional expectations in the area of service, outreach, or research ethics. In addition to this, increased attention is being given to a variety of competencies that have historically not been a part of the professional development process for students. Competencies related to the diversity of students, learning outcomes and processes, technology, and business and entrepreneurialism are all part of today's faculty roles and responsibilities that are not being developed throughout the professional socialization process (Austin & McDaniel, 2006). In terms of teaching, this is especially true for engineering doctoral students where graduate students have fewer teaching experiences than their peers in the sciences, humanities and social sciences (Adams 2002; Newton, Soleil, Utschig & Llewellyn, 2010) suggesting that, "graduate programs are not adequately addressing a major component of faculty work" (Adams, p. 202).

Exacerbating these professional preparation issues for recently minted Ph.D.'s is the increasing competition for academic jobs. Many students who planned to work in research universities will not be successful in securing such positions and those who do secure these positions will need to demonstrate higher levels of competency in research, teaching, service, and interpersonal skills than in the past years. In the past, while having a strong record of scholarship and research was enough to secure a tenure track faculty position at a research institution, it is often not enough now because of the high level of talent that institutions have to choose from. Additionally, those students who are highly competent researchers who do not find employment in research institutions will likely search for positions in comprehensive or liberal arts institutions where there are even fewer positions and where the focus is weighed more heavily on teaching than research. Finally, because 49% of Ph.D.'s are likely to work outside of academe altogether (NSF, 2010), the knowledge, competencies, and skills that Ph.D. students acquire in their programs are in many cases not valued or practiced to the same extent in nonacademic fields.

In the landmark national survey of more than 4000 doctoral students, At Cross Purposes: What the Experiences of Doctoral Students Reveal about Doctoral Education, Golde and Dore (2001) conclude, "The data from this survey show that in today's doctoral programs there is a three-way mismatch between student goals, training, and actual careers" (p. 5). Over the last 30 years, the numbers of full-time tenure track positions has steadily decreased, while the use of full-time and part-time non tenure track positions has increased (AAUP, 2010). Based on our professional experience advising doctoral students, there are four types of students who emerge from the doctoral socialization processes. The first type is those pursuing academic careers (tenure track positions or postdocs) at research intensive universities or colleges who eventually acquire such positions. The second type is the type who decides they would prefer to have a position emphasizing teaching versus research, and eventually acquire a position at liberal arts, comprehensive university, or a community college. A variation of this type of student is the student who really wants a research faculty position but ends up taking a more teaching focused faculty job. The third is the student whose first choice is to work in an academic setting, but are unable to do so for numerous reasons (e.g., no teaching experience, not enough research productivity), forcing them to seek nonacademic positions. The fourth type of student is the one who chooses to pursue a nonacademic career altogether—in agencies, industry, in K-12 institutions, or with nongovernment organizations.

Golde and Dore (2001) suggest that there is a structural imbalance between the number of Ph.D.'s produced each year and the number of available academic jobs and that this is the new status quo. Because of this structural imbalance, significant numbers of doctoral students depart the academic profession involuntarily, pursuing careers outside of academe because of a lack of available positions (LaPidas, 1998; Lehker & Furlong, 2006). This trend has become more acute in recent years; however there has not been a comprehensive study of doctoral readiness, preparation, and the job market since the 2001 Golde and Dore study (C. Golde, personal communication August 15, 2010). However, many professional societies and organizations have assessed the job market for their specific disciplines and professions. Over the last two decades this trend has continued to especially worsen for Humanities Ph.D.'s. For example, the Modern Language Association's annual forecast (2009) on job listings predicts that positions in English language and literature will drop 35 percent from last year and that positions in languages other than English are expected to fall 39 percent this year. These decreases bring the two-year decline in available positions to 51 percent in English and 55 percent in foreign languages. Furthermore, these declines "are the largest ever recorded by the MLA, since it started tracking the trends in the association's Job Information List 35 years ago. The list has also never had fewer notices of openings. The MLA's job list does not include all jobs in English and the humanities, but over time, the ups and downs in openings on the MLA list have been an excellent proxy for judging the overall state of the job market" (Jaschik, 2009).

Additionally, there continues to be a structural imbalance in the number of new Ph.D.'s produced in History and the number of available openings. The American Historical Association reports that "The number of job openings in history plummeted last year, even as the number of new history Ph.D.'s soared. As a result, it appears the
discipline is entering one of the most difficult academic job markets for historians in more than 15 years” (Townsend, 2010). These findings are not isolated to the humanities and social sciences. According to the American Society for Engineering Education’s 2007 database there continues to be an imbalance in the numbers of new engineering Ph.D.’s who desire to work in faculty positions at research universities and the availability of these positions at these institutions (ASEE, 2007).

These findings suggest that many new Ph.D.’s will work in non-faculty and non-academic environments where skills other than research will be important. However, guidance on how students might develop or adapt their professional skills for positions outside academe may not be part of the professional socialization process for some doctoral students (Austin, 2002). Results from a University of Washington study (2001) revealed several skills that are important to careers outside of academia for Ph.D. graduates. For example, research, leadership, communication, administrative, interpersonal skills, and technology skills were listed as skills that employers seek from Ph.D. graduates (Nyquist & Wulff, 2000). Because many faculty have not worked in nonacademic positions, they may be challenged advising students pursuing these types of positions. In addition to these challenges, doctoral students are socialized in an academic culture, which rewards faculty whose students obtain jobs at research universities. Exacerbating these issues is the lack of systematic tracking of Ph.D. career destinations. Faculty believe that far more Ph.D.’s are going into academia than really are. This potential disconnect between doctoral students’ professional goals and the graduate education process highlights the need to examine the professional socialization process and advising of doctoral students. We use the definition of professional socialization as the comprehensive and consistent induction of any individual seeking entry into a profession where they gain the knowledge, skills, and values necessary for entry into a professional career requiring an advanced level of specialized knowledge and skills (Weidman, Twale, & Stein, 2001). The professional socialization process contributes to how new Ph.D.’s understand and perform their work and to their overall career choices. While significant research has been done to examine the professional socialization process for students pursuing academic careers, little attention has focused on how the socialization process may inhibit careers outside the traditional academic route.

In general, Ph.D. professional socialization consists of knowledge acquisition, investment, and involvement (Weidman et al., 2001). For academic positions, professional socialization consists largely of acquiring content expertise and clinical or practical research techniques and skills. However, the academic profession requires many other types of knowledge, skills and abilities that are not present in the preparation process for some Ph.D.’s. These additional professional skills include proficiency in the application of the teaching and learning process, use of pedagogy, understanding and using the research process, and understanding engagement and service (Austin & McDaniels, 2006). Therefore, students form a professional identity that may be incongruent with the workplaces they will encounter. Gouldner (1957) suggests that an individual’s self-concept “is a function of the judgments and orientations which significant others have toward him or her” (p. 285). As a result of the influence of key others in their professional socialization process, doctoral students may be internalizing a professional identity and role behaviors that are incongruent with who they are becoming and what they will be doing if they work in environments that differ from where they were educated.

With the preceding observations in mind, this study sought to uncover the career development needs and goals of Ph.D. students at a large, Midwestern research university and to quantify the demographic characteristics of all Ph.D. students. This study also sought to describe student knowledge of the skills and professional development requirements for academic and non-academic positions, determine their perceived challenges for reaching their career and professional development goals, and gain a greater understanding of the percentage of Ph.D. students who want to pursue academic careers in the face of the aforementioned structural imbalances in the numbers of Ph.D.’s produced versus the availability of academic jobs.

Method

This study was conducted at a large, public, Midwestern research university (Midwestern State University, MWSU) with 119 doctoral programs offered. We developed a quantitative survey (Appendix A) in 2006 to investigate the perceptions and career and professional development experiences of Ph.D. students at Midwestern State University. The survey was comprised of 123 questions related to doctoral career and professional development. Doctoral students were surveyed using an email advertisement explaining the rational of the survey and were directed to a link to a web-based survey instrument. Students self-selected to participate in this survey. Most survey questions were Likert- scale and multiple choice questions. Open-ended questions were included in the survey to enrich and describe quantitative data.

Design and Procedure

The survey was developed with a team of faculty and staff who initially reviewed literature on the career and professional development of doctoral students. Previous
literature allowed us to base survey questions within the national context, allowing for comparison measures to be built into the design. After completing an initial assessment instrument, graduate associate deans and program directors were given copies and asked to provide comments. The survey was also given to the Graduate Senate, comprised of students from each graduate program at MWSU. The survey instrument consisted of six primary sections: career goals at time of enrollment versus now, perception of skills needed versus preparation, career related concerns, time spent engaged in career preparation and challenges in finding employment and advising and departmental support.

Each of these six areas contained a series of questions to probe students about their graduate school experience and needs for their professional development. For example, 26 items were used to generate measures on career goals at time of enrollment versus at the time the survey was launched. Students were asked to reflect on their career goals at the time of their application and when they entered their doctoral program versus the goals they presently hold. One open-ended question was used to generate qualitative data, asking, "Have your career goals and plans changed since beginning your doctoral program? If so, please briefly explain how and why?"

Thirty items were used to generate measures of skills students perceived to be important to their professional careers versus how well they believed their graduate programs had prepared them to perform these skills. Seven items were used as measures to explore students' concerns with several career-related issues such as feelings of preparedness to teach, research, write proposals, supervise others, and find positions in their particular positions of interest. Ten items were used to estimate how much time students spent engaging in career development activities each academic year and what challenges they anticipate gaining employment after graduation.

Eight items were used to assess the extent to which students believed their advisor and department were helpful and supportive in their career and professional development. Students were asked to respond to the extent that they agreed or disagreed with certain statements such as "Faculty members in my program are interested in the welfare and professional development of graduate students," "My advisor has not helped me establish connect-

Table 1. Distribution of academic disciplines/departments.

<table>
<thead>
<tr>
<th>Category</th>
<th>Sample Size</th>
</tr>
</thead>
<tbody>
<tr>
<td>Agriculture &amp; Natural Resources</td>
<td>98 respondents (14.6% of sample)</td>
</tr>
<tr>
<td>Arts &amp; Letters</td>
<td>106 respondents (15.8% of sample)</td>
</tr>
<tr>
<td>College of Business</td>
<td>106 respondents (15.8% of sample)</td>
</tr>
<tr>
<td>Communication Arts &amp; Sciences</td>
<td>106 respondents (15.8% of sample)</td>
</tr>
<tr>
<td>Education</td>
<td>106 respondents (15.8% of sample)</td>
</tr>
<tr>
<td>Human Ecology</td>
<td>106 respondents (15.8% of sample)</td>
</tr>
<tr>
<td>Natural Sciences</td>
<td>98 respondents (14.6% of sample)</td>
</tr>
<tr>
<td>Social Science</td>
<td>106 respondents (15.8% of sample)</td>
</tr>
<tr>
<td>Veterinary Medicine</td>
<td>13 respondents (1.9% of sample)</td>
</tr>
</tbody>
</table>

Table 2. Career interests of doctoral students at time of enrollment at Midwestern State University who have been at the university 1-2 years and greater than 3 years during 2003.

<table>
<thead>
<tr>
<th>Questions addressed</th>
<th>Enrolled 1-2 Years</th>
<th>Enrolled &gt;3 Years</th>
<th>P</th>
</tr>
</thead>
<tbody>
<tr>
<td>&quot;Very Interested&quot; career teaching at a research university</td>
<td>47.7%</td>
<td>42.9%</td>
<td>P=0.026</td>
</tr>
<tr>
<td>n=304</td>
<td></td>
<td>n=357</td>
<td></td>
</tr>
<tr>
<td>&quot;Very Interested&quot; career research in an academic setting</td>
<td>51.3%</td>
<td>44.5%</td>
<td>P=0.094</td>
</tr>
<tr>
<td>n=304</td>
<td></td>
<td>n=357</td>
<td></td>
</tr>
<tr>
<td>&quot;Not Interested At All&quot; or &quot;Somewhat Interested&quot; career as an independent consultant</td>
<td>42.1%</td>
<td>48.1%</td>
<td>P=0.054</td>
</tr>
<tr>
<td>n=304</td>
<td></td>
<td>n=357</td>
<td></td>
</tr>
<tr>
<td>&quot;Not Interested At All&quot; or &quot;Somewhat Interested&quot; career working in government</td>
<td>39.5%</td>
<td>45.1%</td>
<td>P=0.039</td>
</tr>
<tr>
<td>n=304</td>
<td></td>
<td>n=357</td>
<td></td>
</tr>
</tbody>
</table>
survey. Of the sample, 68.1% were U.S. citizens, 27.1% were non-U.S. citizens, 2.5% were permanent residents, and the remaining 2.2% did not provide information on citizenship. In addition, 80.4% of respondents were Caucasian, 5.5% were African American, 5.3% were Asian American, 3.6% identified as Multiracial and 0.8% were Native American/Alaskan Native. The enrollment status of 87.9% of respondents was full-time, 11.6% were part-time, and 0.4% did not provide information on their enrollment status.

Data Analysis

In coding and analyzing the data, it became clear that doctoral students experience numerous emotions, thoughts, and feelings with regard to their preparation for the Ph.D. An analysis of the text revealed a number of poignant and powerful statements associated with their professional socialization in their graduate preparation program and the work place environment. Specific tactics for generating meaning which were used in data analysis consisted of noting patterns and themes, clustering, noting relationships between variables, counting, making contrast and comparisons, seeing plausibility, and noting conceptual/theoretical coherence (Miles & Huberman, 1994). During the initial readings of the text, we identified several first-order concepts (Van Maanen, 1979). We devoted subsequent readings to chunking/clustering these concepts into categories based on relationships between concepts. In the discovery of concepts, Strauss and Corbin (1998) suggest that to develop concepts we must utilize open coding. They note “we must open up the text and expose the thoughts, ideas and meanings therein” (p. 102).

Findings

Our study revealed three major findings: the career goals of graduate students change over time, skill preparation for academic and non-academic careers may be inadequate at the time this study was conducted and specific professional development and career guidance is lacking for some graduate students or they do not take advantage of the resources that are available.

Comparison of Career Goals at Enrollment and Now

Similar to Golde and Dore (2001) we found that the career goals and interests of graduate students change over time. However, unlike Golde and Dore (2001) we identified a timeframe in which this shift occurs. A significantly greater percentage of doctoral students who have been at MWSU for 1-2 years were very interested in careers in teaching at research universities at the time of their enrollment than students who had been at the institution for >3 years. A similar trend was observed for students who wanted to be engaged in research careers at academic institutions, however, there was a not a statistically significant difference between groups attending the institution from 1-2 years versus >3 years (Table 2). Similar responses to interests in “teaching” and “research” at academic institutions may be attributed to most faculty at large-research intensive universities requiring joint responsibilities. Perhaps a somewhat disconcerting finding is that significantly fewer students who had been at MWSU for >3 years were interested in teaching at a research university or doing research in an academic setting than at the time of their enrollment.

Similarly, significantly more students who had been at MWSU for >3 years were “not interested at all” or “somewhat interested” in careers in government than those who had been at MWSU for 1-2 years (Table 3). These results may indicate that students were
learning more about job expectations associated with government agencies and decided to pursue other career trajectories or the 27.1% of our sample that were non-U.S. citizens realized they had limited opportunities in this sector, especially with the federal government.

Student (those enrolled 1-2 years and those enrolled >3 years) responses to survey items inquiring about their current interests (versus at the time of enrollment) were very similar. Student interest in research careers in academic settings was less in those students who had been at MWSU for >3 years versus those who had been enrolled 1-2 years (Table 3). These results may be attributed to smaller cohorts of students entering graduate school with “definite career goals.” For example, when asked about their formulation of current career goals nearly 40% and 60% of students who had been at MWSU 1-2 years and >3 years (n=246), respectively indicated they had definite goals they were pursuing. These students were primarily from the colleges of Education (19.1%), Social Sciences (16.3%), Arts and Letters (12.6%), and Agriculture and Natural Resources (12.2%). Contrary to these findings, 79 students indicated that they were “struggling to identify career paths”; this represents 8.4% of our respondents. The majority of the students in this category were from the colleges of Natural Sciences (21.5%), Education (20.3%), and Engineering (15.2%)

The following significant differences emerged in mean ratings of interest in career goals now and at enrollment (below and Figure 1).

- Mean ratings for interest in conducting research in a non-academic setting were significantly higher now (M = 3.28, SD = 1.34) than at enrollment (M = 3.18, SD = 1.38) [t(631) = -2.35, p < 0.05]

- Mean ratings for interest in working for the government tended to be significantly higher now (M = 2.88, SD = 1.41) than at enrollment (M = 2.78, SD = 1.40) [t(621) = -2.86, p < 0.01]

- Mean ratings for interest in owning and operating your own business tended to be significantly higher now (M = 2.13, SD = 1.35) than at enrollment (M = 2.06, SD = 1.33) [t(606) = -2.43, p < 0.05]

Because we were interested in knowing more about how and why students’ career goals and plans changed, we asked, “Have your career goals and plans changed since beginning your doctoral program? If so, please briefly explain how and why?” Student responses were then analyzed using qualitative research methodologies.

Twenty-five students from numerous disciplines answered this open-ended question, providing a rich account of why students change their career goals and plans. The career goal that changed the most was the decision to pursue an academic position at a research university. Several students commented that they initially wanted to work as a professor in a research position but that their plans and goals changed because of their direct experience with the actual work of the profession or because of their exposure to the work of their faculty. Students commented on several issues related to their decisions. However, balance, happiness, having a family, and overall stress were cited as the main contributing factors to their change of goal. One student from teacher education commented, “I have found that many graduate students and myself included do not want the long hours and high stress that comes with being a professor who teaches and performs research at a large institution.” Echoing similar sentiments, another student indicated, “I would say that I am more interested in teaching positions now then when I started. Originally, I was probably more geared toward research one institutions.”

There were nine students who indicated that they would leave academia altogether, preferring to work in government, industry, or non-profit organizations. Many students come to realize that there are more options available to them outside of academia. A fisheries and wildlife student asserted, “I came to a realization that more doors are open then university faculty. I have several unsolicited job offers already.” Another engineering student stated,
"I started my Ph.D. program with the goal of obtaining a faculty position at a major university, but I am thinking more now about looking for government or industry positions when I finish my degree."

**Career Preparation and Job Search Guidance**

Results from the survey revealed that career services and guidance for academic and non-academic careers are the most pressing needs cited by participants. Other needs that were acknowledged were traditional career services such as searching for positions, interviewing, and CV/resume writing and exploring options like internship opportunities for non-academic positions in the federal government, industry, and foundations.

In responding to the open-ended question, "Are there specific career development needs in Ph.D. career planning and development that are not currently being met?" twenty-four students responded that the most pressing need they have is related to career options and securing employment. Of the twenty-four students who responded, six suggested that they felt lost in terms of how to prepare for careers outside of academia and that they are kept in the dark as far as preparing for their professional careers whether they be in or outside of academia. Several of these students used the word “options” in the context of wanting to know about “options beyond the tenure track.” One student indicated that it would be nice to have "statistics on employment of recently graduated Ph.D.'s from English." A doctoral student from chemical engineering expressed the need for guidance, stating "I know that I do not want to stay in academia or do research in industry. I want to use my science background in a more business related setting. However, I have no idea how to find jobs like this or if they even exist. A number of industry/government people that come here to give seminars are simply doing research outside academia. This isn't what I am interested in."

Three students acknowledged feeling that faculty are just not adequately prepared to give advice on job searching and researching for nonacademic positions or that they were so overwhelmed with their own work that they cannot help students with their job searches. One student commented, "I think the career development of Ph.D. students is being left up to an already overburdened faculty advisor and is, therefore, not as successful as it could be." This participant’s experience illuminates the type of perspective that doctoral students have by observing the role of their faculty members.

**Skills Needed for Future Positions**

On a list of 15 skills, participants were asked to rate how important they believe each skill would be in a future position [rated on a scale from 1 (extremely important) to 5 (not at all important)] and how well their graduate program had prepared them to perform the skill [rated on a scale ranging from 1 (has strongly prepared me) to 5 (has lowered my skill level)] (Figure 2).

Overall, there were significant gaps in the importance students placed on skills that were important to their professional careers versus how well they felt they were being professionally prepared to perform these skills. For example, students felt prepared to perform research on...
an individual basis; however, there is a significant gap in how important they believe the ability to collaborate in research (93.8%) versus how well prepared they felt to do so (77.4%). Perhaps most startling is the importance students place on their development of teaching and mentoring versus how well they felt prepared to teach and mentor (Figure 2). Because the above mentioned skills are key roles that students will be expected to perform in faculty positions (Golde & Dore, 2001), students lack of preparation should be cause for concern. Also, many of these skills are desired by all types of employers and are transferable across employment sector. The ability to network, mentor, lead, collaborate, and communicate are skills that need to be intentionally integrated into the doctoral preparation process for all types of positions.

Job Skill Preparation

Results from our survey indicate that some doctoral students feel unprepared to perform the skills needed for academic and non-academic positions. In looking at the professional development needs of students surveyed, the majority of students felt unprepared in the skill areas of teaching, proposal writing, management and communication skills, and with academic preparation in general.

Teaching

Teaching and proposal writing were two primary professional development skills that graduate students felt they needed additional experiences. For those seeking academic careers there is an underlying anxiety and fear that they are not being adequately prepared for the professorate or will not be competitive for academic positions because of the lack of teaching experience. Fifteen students, who responded to an open ended question, indicated that having more professional development in teaching was their number one concern for their career and professional development. One student from crop and soil science lamented, “We get no teaching experience. As teaching assistants we sit in on lectures and hold office hours. We need a chance to plan out discussion sections at least!” Another counseling and education psychology student echoed similar experiences, “In my graduate program, there are NO opportunities to gain teaching experience. This will be an issue in any hiring situations.” Overall, this student learned that teaching is important and is frustrated and anxious that he/she was not receiving preparation for this vital competency. In addition, one student on a university distinguished fellowship felt that being on a fellowship hindered the development of teaching skills and another chemistry student felt that it was incumbent for their department to provide professional development in teaching as part of the professional preparation process.

Proposal Writing

Proposal writing was noted as equally important as a career and professional development need. Fifteen students, who responded to an open ended question, cited a desire to learn about proposal writing and managing grants. One counseling and educational psychology student noted, “There aren’t enough faculty members connecting students to appropriate research or grant administration opportunities they are aware of.”

Management and Communication Skills

Eight students indicated that they also felt unprepared in the area of management and communication skills. Most often cited were interviewing skills, budgets, supervising, networking, running meetings, management and public speaking and communication skills – both written and oral. One student asserted, “Management skills should be a requirement for students pursuing academic careers,” while another suggested this need because of “the business of the field (i.e. budgeting, administration, goal setting). I think we learn a lot about scientific systems and patterns but little about the business.” This makes graduates less prepared for management and supervisory positions that they may desire to pursue in the future, either within academia or outside of it. Ironically, three students pursuing Ph.D.’s in management lamented their lack of preparation for management and communication skills.

Academic Preparation

Although a minor theme area, six students commented on their need for more guidance and help with publishing, conference presentations, gaining experience sitting on committees, and being given adequate mentoring experience. Six students asked for specific workshops or seminars on publishing.

Implications

Our findings indicate that the professional socialization of students who pursue a doctorate is problematic for some students pursuing academic careers in general and especially troublesome for students who may depart the academic profession all together. These findings also suggest that the professional socialization and preparation of doctoral students must include a variety of career and professional development experiences and support. In each of the areas we assessed, it was clear that some students needed career education and support. Although doctoral student career goals at enrollment versus goals at the time of our survey tended to correlate highly across the various career goals, there were three exceptions — conducting research in a non-academic setting, working for the government,
and owning and operating your own business. We believe these changes in goals may be indicative of an awareness of expanded career opportunities that is growing through formal and informal socialization processes. Increases in any goal area may suggest that Ph.D. students perceive lack of available academic employment or have learned about expanded career options. It appears that students are informally learning from students who are on the job search that they are struggling to find academic jobs. Increased desire for government work may be the result of increased exposure to this sector due to collaborations via grant funding resulting in students seeing this career trajectory as a viable option. In addition, working for the government may be more appealing to students because of its close affiliation with academia.

Changes in career goals may also be a byproduct of experiencing the realities of the academic profession as modeled by the doctoral student advisor or departmental faculty. Several students indicated that they did not want to pursue an academic research position because of their up close exposure to the profession. Those students who commented that they would like to stay in the academic profession indicated that they would be searching for a teaching focused institution. Four students commented that they made this decision based on learning what the expectations were for a professor at a research intensive university.

More importantly, because many of the career goals of Ph.D. students are different from the academic career trajectory, the basic professional socialization and preparation for students who would like to pursue this career goal is misaligned. This leaves some students ill equipped to effectively work in these environments due to potential deficiencies in professional skills and awareness of the cultural expectations of positions. Overall, the professional preparation and socialization doctoral students are receiving is equipping them to work in research universities. As noted earlier, students are internalizing and forming a professional identity based on the academic profession. Institutionally, students are integrated into the academic professional community by adopting its required norms, attitudes, and values (Weidman et. al., 2001). In addition, students consciously and unconsciously internalize the characteristics of their departments' organizational culture which includes behavioral regularities, group norms, espoused values, formal philosophy, rules of the game, climate, embedded skills, habits of thinking, mental models/ or linguistic paradigms, shared meaning, and root metaphors or integrating symbols (Schein, 1995).

The fear of not being able to secure academic and non-academic positions is exacerbated by a powerful academic culture which often communicates that to be anything other than a tenure track faculty member at a research university may be considered "failure" (Lovitts, 2001). During the late stages of Ph.D. completion, students go through a two stage process of realizing how difficult an academic job search is and coping with the reality that these jobs, in many cases, really are not available. Thus, Ph.D. students face a triple challenge: the labor market conditions are stagnant for many fields, students are unaware of alternative careers, and some students are deterred from pursuing anything other than a tenure track job at a major university.

Limitations

One limitation of this research project was the data collection technology used. The technology system used to survey students had a 30 minute time limit and it was assumed that several students timed out of this survey. This limitation is believed to have impacted the numbers of international students and those for whom English is not their first language. Data collection was also limited to students who self-selected to participate in this survey at only one university. While these factors limit the ability to generalize findings to a national doctoral student population they may cause others working at large research intensive universities to question the perceptions of their students regarding career preparation. Future research should address a broader sample of graduate students in the United States.

Recommendations for Researchers

Similar to the Golde and Dore (2001) findings, this study revealed that career goals of graduate students change over time, skill preparation for academic and non-academic careers continues to be inadequate for some students and professional development and career guidance is lacking for some graduate students. Because these findings suggest that very little has changed over the last 10 years, it is recommended that future research focus on why research intensive institutions are slow to change their practices when the issues involving Ph.D. career readiness and preparedness have been identified for some time. It would be interesting to solicit faculty perspectives on their views on career expectations of Ph.D. students and what they perceive are the challenges and opportunities for preparing future Ph.D.’s for academic and nonacademic positions.

Recommendations for Graduate Student Administrators

1. Provide tailored career services to graduate students through a centralized location, the graduate school or college and through departmental collaboration with career services. Collaboration among an institution’s graduate school/college, faculty development office,
career services and graduate programs is believed to be the ideal arrangement because it addresses the overall systematic issues related to career readiness and preparedness.

2. Because faculty members do not have the sole responsibility for career development, it is recommended that institutions provide institutional and departmental support for student exploration and choice of non-academic careers by offering specific services and programs to aid students exploring potential career options.

3. Encourage students to engage in professional development activities and opportunities that provide depth and breadth of experience. For non-academic careers, internships, job shadowing, and experiential learning opportunities outside of academia are essential.

4. Assess Ph.D. programs and preparation for all types of careers: Do they provide experiential learning opportunities for students to learn and develop in the areas of teaching, research, and service and outreach? Are intentional learning outcomes and activities developed to enhance students' skills in these areas? Does the program provide a formalized professional socialization system for mentoring students in all areas of the students' professional development, whether it be academic or nonacademic?

5. Expose students to various career paths by encouraging internships, inviting alumni to speak to students, and encouraging students who seek professional opportunities outside of academia.

6. Help students integrate an understanding of the range of roles they will play as faculty and the full range of institutional types available for employment.

7. Provide professional development workshops and programs and publicize these opportunities to help students explore and prepare for academic and non-academic careers.

8. Adapt faculty reward structures such that faculty are rewarded for graduating students no matter what career path Ph.D. students choose so that faculty members feel able to support nonacademic career paths.

9. Develop public Ph.D. career destination database in order to track the career destinations of Ph.D.'s to provide faculty and graduate student administrators a more realistic picture of the Ph.D. job market.

References


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