

Contrasting the Socialization Experiences of Doctoral Students in High- and Low-Completing Departments: A Qualitative Analysis of Disciplinary Contexts at One Institution

Socialization has become the common theoretical framework used to better understand the complexity of the doctoral student experience (e.g., Austin, 2002; Clark & Corcoran, 1986; Egan, 1989; Ellis, 2001; Gardner, 2007; Gonzalez, 2006; Gottlieb, 1960; Kirk & Todd-Mancillas, 1991; Soto Antony, 2002; Weidman, Twale, & Stein, 2001). In particular, theories of socialization have been connected to the issue of attrition in doctoral education, with researchers often attributing poor or inappropriate socialization to a student's decision to depart the graduate program (e.g., Clark & Corcoran, 1986; Ellis, 2001; Gardner, 2007; Golde, 1998; Lovitts, 2001). However, while socialization in the context of doctoral education has been widely studied it is generally viewed monolithically in that graduate students' experiences, in general, are viewed as a whole rather than through specific disciplinary and institutional contexts. Understanding that the doctoral experience is centralized within the discipline and the department (Golde, 2005) and that institutional context and culture uniquely influence the student experience (Kuh & Whitt, 1988), this study explored the socialization experiences of 60 doctoral students in 6 disciplines at one institution. Specifically, the study was guided by the question: "How does disciplinary context and culture influence the socialization of doctoral students at one insti-

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tution?" I begin with an overview of the concepts of socialization and their relation to doctoral student attrition, followed with a description of the study's methods. Findings are subsequently presented, culminating with a discussion and implications for policy, practice, and future research.

Doctoral Student Attrition and Socialization

The National Research Council's current study on doctoral research programs in the U.S. has cited doctoral student attrition rates at 57% across disciplines (Gravois, 2007). Reported attrition rates, however, range greatly by discipline and by institution, with a low of 24% in the biomedical and behavioral sciences (Pion, 2001) to a high of nearly 67% in the humanities and social sciences (Bowen & Rudenstine, 1992). Other recent studies, such as those conducted by Golde (2005), Lovitts (2001), and Nettles and Millett (2006), also report widely varying rates of attrition or departure, ranging from 11% to 68% across disciplines. Furthermore, attrition rates of underrepresented populations have been reported at higher rates across disciplines (Council of Graduate Schools, 2004; Lovitts, 2001; Nettles & Millett, 2006), pointing to a disparate experience for these students. These high attrition rates translate into high costs for institutions that sponsor these students, for the faculty who work with them, and of course, for the students themselves. Lovitts (2001) remarked, "The most important reason to be concerned about graduate student attrition is that it can ruin individuals' lives" (p. 6).

There is no one reason why doctoral students leave; indeed, the studies conducted on doctoral student attrition point to the multifaceted nature of the attrition problem (Baird, 1993; Cook & Swanson, 1978; Girves & Wemmerus, 1988; Golde, 2005; Golde & Dore, 2001; Lovitts, 2001; Nerad & Miller, 1996; Nettles & Millett, 2006). Much of the literature concerning doctoral student attrition falls into one of several main categories, including the relationships between attrition and funding (e.g., Bowen & Rudenstine, 1992; Ethington & Pisani, 1993; Nettles & Millett, 2006), attrition and advisor relationship (e.g., Clark & Corcoran, 1986; Lovitts, 2001; Nettles & Millett, 2006), attrition and gender (e.g., Berg & Ferber, 1983; Herzig, 2004b; Maher, Ford, & Thompson, 2004), attrition and race (e.g., Ellis, 2001; Herzig, 2004a; Margolis & Romero, 1998), attrition within particular disciplines (e.g., Bowen & Rudenstine, 1992; Golde, 2005; Nettles & Millett, 2006), attrition and quantitative measures such as test scores and GPA (e.g., House & Johnson, 1993; Nettles & Millett, 2006), as well as attrition and socialization experiences (e.g., Gardner, 2007; Golde, 1998; Gonzalez, 2006). It is this final area, the socialization experience, upon which I focused the current study.

Socialization is the process through which an individual learns to adopt the values, skills, attitudes, norms, and knowledge needed for membership in a given society, group, or organization (Becker, Geer, Hughes, & Strauss, 1961; Kuh & Whitt, 1988; Merton, 1957; Van Maanen, 1984). In relation to the graduate student, socialization is imperative to a successful graduate school experience (Clark & Corcoran, 1986); indeed, unsuccessful socialization contributes to the decision to depart from the degree program (Council of Graduate Schools, 2004). Unlike other models of professional socialization, however, graduate student socialization is unique in that the student is becoming socialized not only to the graduate school environment and the role of student but simultaneously to the professional role (Golde, 1998).

The socialization experience for graduate students is also unique by discipline. The discipline, and its location in the university through a department, is the locus of the graduate student experience (Golde, 2005). While studies of attrition in undergraduate education are generally focused upon the larger institutional environment (see Pascarella & Terenzini, 2005; Tinto, 1993), studies within graduate education must look also to the particular departmental context to better understand the specific contributors to the attrition problem (Golde, 2005; Nettles & Millett, 2006) as the socialization experience within this context is often as specialized as the discipline in which it is experienced (Becher & Trowler, 2001; Biglan, 1973; Clark, 1987). For example, the socialization experience in the sciences, one based in laboratory work conducted in groups, is quite different from the independent scholarship conducted in the humanities (Gardner, 2007; Golde, 1998). Nevertheless, institutional context must also be considered as part of the socialization process (Kuh & Whitt, 1988). Unfortunately, the literature has only presented a portion of the doctoral student experience as most of the oft-cited studies have taken place within only the most prestigious and highest-ranked institutions (Bowen & Rudenstine, 1992; Nerad & Cerny, 1991; Nettles & Millett, 2006).

Several scholars have discussed the socialization process of graduate students, generally consisting of several phases or stages. These stages or phases represent the developmental nature of the socialization process (Antony, 2002; Baird, 1993). For example, Weidman, Twale, and Stein (2001) presented four stages of graduate student socialization as did Lovitts (2001) while Tinto (1993) offered three stages in regard to student departure. Each of these models expresses socialization in regard to prior or anticipatory socialization to the graduate school experience through the culmination of the program and entrance into the chosen profession; however, these models tend to treat the graduate

experience as monolithic in nature. Furthermore, scholars such as Antony (2002) have provided valid criticism of many these contemporary views of socialization, forwarding that they do not allow for individual differences or that the socialization process, through this orientation, is one that assumes assimilation of the individual to the organization. In addition, these models fall short of explaining the complexity and holistic nature of the graduate student experience as they tend to focus primarily on programmatic components rather than the total developmental transformation experienced by a student in his or her graduate program.

The three-phase model of Gardner (2007, 2008), developed from empirical research, speaks to these gaps in the literature as it not only addresses the phases of the doctoral experience from the programmatic perspective in regard to requirements such as coursework, examinations, and the dissertation, but also addresses development in relational perspectives such as changing relationships with peers, faculty, and the larger field of professionals. Furthermore, personal identity development is also accounted for in this model. Gardner's model is primarily intended to give structure and focus to the multiple events and relationships that occur during the doctoral program thereby facilitating a better understanding of the student's experience at particular turning points. In other words, the model is a tool for structuring the programmatic aspects of the student's experience along with the interpersonal and developmental experiences that also occur.

Gardner (2007, 2008) described the first phase as the time leading up to admission into the doctoral program through the beginning of the coursework experience. This phase generally only lasts a few months but impresses greatly upon the rest of their program and solidifies their decision to attend one institution over another. Tasks and experiences at this phase include applying to prospective programs and institutions, submitting requisite materials to the programs such as GRE scores, visiting programs, meeting and talking with faculty members, staff, and graduate students in these prospective programs, making a final decision in regard to the program of choice, moving to the new location, and attending orientation and the first few months of class. At this phase students are also meeting many of their new colleagues and faculty and settling into their roles as doctoral students before classes begin. In regard to socialization, this time is integral to the rest of the students' experience and marks what is typically referred to as the period of anticipatory socialization (Austin & McDaniels, 2006; Lovitts, 2001; Merton, 1957; Tierney & Rhoads, 1994; Weidman et al., 2001). From a personal and interpersonal perspective, these students are form-

ing relationships and key understandings of what it means to be a doctoral student and a future professional from these initial experiences.

Phase II (Gardner, 2007, 2008) encompasses the time after which the doctoral student begins his or her actual program through the onset of candidacy status. This phase includes not only the coursework, but the other parts of integration into the program, including social integration with peers and faculty, the eventual choice of an advisor and committee, preparation for examinations, and, for many students, the experience of an assistantship. Again, the relationships formed in this phase and the understandings gleaned from their experiences are integral to the student's current success as a doctoral student and future success in the particular discipline. Altogether, these formal and informal gateways through which the student must pass mark important parts of the overall socialization process (Rosen & Bates, 1967).

After dealing with the structures and tasks of Phase II, students move into the final phase of their doctoral experience. Phase III marks the period after which students have passed the examinations, or gain candidacy status (Gardner, 2007, 2008). At this phase, students focus primarily on their research and look toward the future. Programmatic structures in this phase include the dissertation research, generally consisting of an early proposal for research typically completed during the examination process in Phase II or a brief prospectus completed soon after the examination process is completed, as well as the actual conducting of the research, the writing of the findings, the preparation for the job search or post-doctoral appointment, and concluding finally with graduation. Personal and interpersonal development in this phase relate to the students' changing relationships with faculty members and peers, including their orientation toward a more professionally-minded self, rather than solely that of a student, reflecting the Personal Stage of Weidman, Twale, and Stein (2001). It is this conceptualization of the graduate student socialization process that served as the guiding framework for the study and its analysis, described in detail below.

Methods

Funded by the Alfred P. Sloan Foundation, this study was guided by the question: How does disciplinary context and culture influence the socialization of doctoral students at one institution? To address the research question, a total of 60 doctoral students from 6 disciplines were interviewed. The chosen disciplines were purposefully selected for several reasons. First, it was important to examine doctoral education from multiple disciplinary perspectives as the discipline is the locus of the

doctoral student experience (Golde, 2005). The disciplines chosen included English, communication, psychology, mathematics, oceanography, and electrical and computer engineering. These disciplines therefore represent diversity among the disciplinary spectrum (Becher, 1981; Becher & Trowler, 2001; Biglan, 1973), with English from the humanities or the soft-pure disciplines, psychology and communication from the applied social sciences or the soft-applied disciplines, mathematics and oceanography from the pure sciences or the hard-pure disciplines, and engineering from the technologies or hard-applied disciplines. Second, it was determined from a previously conducted study that these disciplines represented both the highest and lowest completion rates over a 20-year period at the institution studied, including communication with 76.5%, oceanography with 72.7%, psychology with 70.2%, English with 56.4%, mathematics with 37.6%, and engineering with 17.6% (see Table 1). Therefore, not only were disciplinary context and culture important to understanding the socialization experiences of the students but also the specific context of completion and attrition in which these departments were situated.

The institution studied is classified as a research-extensive (McCormick, 2001) institution or a research university with very high research productivity (The Carnegie Foundation, 2005). Located in the United States, this institution annually enrolls over 30,000 students, including over 4,000 graduate and professional students. In relation to its peers, this institution is ranked as a third-tier institution among national universities (*U.S. News and World Report*, 2007), although many of its individual programs and colleges are rated in the very top (*U.S. News and World Report*, 2007). From a previous study conducted, it was determined that this institution has an overall doctoral student completion rate of 52.3%, on par with averages cited by the National Research Council (Gravois, 2007) and the Council of Graduate Schools (2004).

Interviews with the 60 doctoral students included in the study were conducted in the winter and spring of 2007. Access to these individuals

TABLE 1
Participants by Discipline and Completion Rate.

	Communication	Oceanography	Psychology	English	Mathematics	Engineering
Number of students interviewed	10	10	10	10	10	10
Completion rate	76.5%	72.7%	70.2%	56.4%	37.6%	17.6%

was initially made through contact with each department's chairperson to gain entrée to these departments and their constituents. After this permission was granted, I met with the department chairperson and director of graduate studies in each department to identify the students' year of admission to the program, demographic information including international student status, race, and gender (all students eventually interviewed were full-time throughout their programs). From this information, I divided the students into three groups representing the three phases of the socialization process (Gardner, 2008), and conducted criterion-based selection (Maxwell, 1996) in order to obtain a representative participant base inclusive of student demographics within the larger department. For example, in the departments of engineering and mathematics almost 50% of all doctoral students were categorized as international or foreign students. In my selection of participants, therefore, I aimed for at least 50% of the participants to also represent this status (see Table 2 for information on student phase by department). From these three groups, I randomly contacted students via e-mail to solicit their participation in the study. In most departments, several attempts were needed to obtain a total of 10 students. While this sampling resulted in small numbers of participants in some cells, it nevertheless provided a clearer picture of the actual socialization experience occurring at that particular time rather than asking students to recall in detail their experiences in the past. However, due to these small cell numbers, analysis by phase within the particular disciplines was limited but overall phase analysis across departments was then possible.

After agreeing to participate, face-to-face interviews with the students were conducted utilizing a loosely-structured protocol designed by phase, allowing participants to diverge from the main topics and to further explore concepts and ideas. In other words, interviews with students in Phase I were structured differently from those in Phases II and III. For example, questions focused around the students' experiences throughout their programs, including time of admission through the dissertation ex-

TABLE 2
Participants by Discipline and Phase.

	Communication	Oceanography	Psychology	English	Mathematics	Engineering
Phase 1	2	3	2	3	3	3
Phase 2	4	4	5	3	3	3
Phase 3	4	3	3	4	4	4

perience, according to the students' phase at the time of the interview. The three-phase sampling subsequently allowed for a better understanding of the specific issues and concerns relevant to the student at the particular time of graduate study rather than solely a retrospective understanding (i.e., asking departed students to recall specific times in their experiences) used by other researchers (Golde, 2005; Lovitts, 2001). Interviews lasted for approximately 45 to 90 minutes and were audio-taped and later transcribed verbatim.

Analysis of the data was conducted through the use of the constant comparative method, "a research design for multi-data sources, which is like analytic induction in that the formal analysis begins early in the study and is nearly completed by the end of data collection" (Bogdan & Biklen, 2003, p. 66). I followed Glaser's (1978) steps in the constant comparative method, wherein I began collecting the data, and then I sought out key issues, events, or activities in the data that became main categories for focus. I then continued collecting data to provide undergirding for these main categories. I then wrote about the categories explored, keeping in mind past incidents while searching for new, while working with the data and emerging model to discover relationships. Finally, I then sampled, coded, and wrote with the core categories in mind. Glaser's steps for analysis also allowed for emergent themes to develop from the data and provided a means by which large amounts of data were compressed into meaningful units for analysis. As stated earlier, I also utilized concepts of graduate student socialization (Gardner, 2007; Gardner, 2008) to better understand the dimensions along which students responses varied.

Trustworthiness of the data collected and its subsequent analysis was obtained through peer debriefing (Maxwell, 1996), wherein another colleague was given access to transcripts for their analysis and verification of themes, member checking, wherein at least one student from each department was sent a synopsis of the interview for verification of themes, as well as through triangulation of data sources (Bogdan & Biklen, 2003; Maxwell, 1996) as the current study was a part of a larger study in which multiple departmental administrators and faculty members were interviewed.

Findings

From the analysis of the interviews with the 60 doctoral students, 4 themes emerged in all 6 departments that described the students' socialization experiences. What was interesting was that regardless of completion rate, the students discussed similar issues. The socialization experi-

ence, however, varied in dimension by completion rate. In other words, while all students interviewed discussed similar socialization experiences, the degree or dynamics of the experience discussed varied by departments with higher or lower completion rates. In addition, it was evident that socialization also occurred across disciplinary boundaries in relation to the developmental phase in which the students are located.

The four themes discussed below include (a) support, (b) self-direction, (c) ambiguity, and (d) transition. These themes represent the four main topics discussed by students in all departments. That is to say, these themes were those that cut across disciplinary boundaries and were discussed by the students in each of the six departments studied. Where applicable, findings in relation to phase are also discussed but, as previously discussed, the small cell size within departments only permitted for analysis at the larger phase level.

Support

The socialization process, by definition, is inherently social. As an individual learns to become a part of a larger organization or group of people, he or she must also learn how to interact with others and to forge relationships within this organization to be successful (Becker et al., 1961; Schein, 1968; Van Maanen, 1977). This process, however, is also one that is inherently anxiety-producing for the newcomer (Van Maanen, 1984) and many will seek out support from others to endure the process. In the case of the graduate student, support can come from peers, faculty members (Weidman et al., 2001), and, in the case of several students in the current study, individuals external to the program. The degree to which support was sought and from whom, however, varied greatly by department.

In communication, the department with the highest completion rate at this university, students spoke endlessly of the support they received from all constituencies in the department. The students interviewed repeatedly used words such as “family” and “camaraderie” to describe the department. One student remarked, “There is constant support and encouragement through the department. What keeps me here, I guess, is that I don’t miss my family as much because I have a family here,” while another commented, “I just think we really have an inordinately good faculty and they’re really invested in making sure that the graduate students get the attention that they need in order to be able to do well.” In other higher-completing departments, faculty members were also discussed as a source of support but this constituency was often discussed more by students in later phases of the socialization process. One psychology student characterized this change in support when she said, “The older students kind of mentored you and then after that you went to the professor.”

For the vast majority of the students in the study, therefore, the central source of support was other students in their program. Indeed, support from other students was mentioned far more frequently than support from advisors or faculty members, a finding generally not discussed in the existing literature. Students seek out one another for advice, guidance, and mentoring. One English student said, "We all got to know each other. We formed kind of a network of relationships that we could kind of come to each other when we were having troubles." An oceanography student similarly remarked, "I think other graduate students are usually very helpful because they've gone through a lot of it so I think talking to them they give you some really good advice."

The only exceptions to this rule were the departments with the lowest completion rates, such as engineering and mathematics. In these departments, students spoke more often of depending on faculty members for support. Coincidentally, these departments were also those with the highest percentages of international students, who often experience issues related to social integration, language acquisition skills, and developing relationships with peers (Mallinckrodt & Leong, 1992). In particular, international graduate students may prefer relationships with faculty advisors to graduate student peers as they seek out formal sources of assistance, a marked difference from U.S. students (Leong & Sedlacek, 1986). The international students interviewed used words like "helpful" and "supportive" to describe the support given to them by faculty but when asked who or what had been most helpful to them in their graduate programs overall, many of the students, regardless of nationality, mentioned others like "my family," "my roommates," or "people outside of school."

Self-Direction

The second theme discussed by all students in the study was self-direction. The journey toward independence is an integral part of the socialization experience for graduate students (Gardner, 2008; Lovitts, 2005), particularly as the culminating experience of graduate school is the production of original and independently-created scholarship (Council of Graduate Schools, 2005). As students progress through each phase of the socialization experience they are expected to become more independent (Gardner, 2008), a process that may be more difficult for some than others.

In this study, the theme of self-direction arose in all the departments studied but often to a different extent. For example, students in both communication and engineering spoke of self-direction more than any other departments. As previously stated, these two departments reflected

the highest and lowest completion rates, respectively, so it was interesting to note that the topic arose so frequently in both departments. However, in communication, students discussed the topic of self-direction more often in terms of the students feeling they were allowed freedom to choose their own direction and use their own motivation to guide them. One communication student related, "I love the department because they let you do what you want to do. If you're not self-motivated this is not the department for you, but if you are it gives you a lot of freedom to do what you want." In engineering, the students discussed self-direction in regard to learning how to conduct research independently, often talking about the ambiguity the process involved and that they felt the need to be "self-taught" and feelings of being "left alone" to figure it out on their own. An engineering student shared, "I think [you need to] learn on your own because there is only so much you can get from a class. You won't find a class to help you do research. It's very difficult, it's very specific, so it's something you do on your own."

In the other departments, self-direction also varied as a theme depending on the context. English students, for example, discussed self-direction and independence just as frequently as did psychology students. However, students in English often discussed self-direction in terms of "having a plan" to complete their degree in a timely manner. One student remarked, "I really believe that success in graduate school is all about strategy," whereas the students in psychology often discussed self-direction more often as it related to advising and a lack of direction from their faculty advisors. In this vein, one psychology student told me about her advisor:

He is very much a person who lets you sort of figure it on your own. He really doesn't want to look over your shoulder or breathe down our neck. He expects us to be independent and hard-working but also to be able to work together while in a group. So he doesn't do any hand-holding and for some students I think that really works but for other students, like me, where I need a little more feedback and supervision, that was difficult.

In oceanography and mathematics, self-direction was not as prevalent a topic as for other students but when discussed, it was more often related to feeling much ambiguity and "feeling lost" when they began their programs, forcing students to be much more self-directed than they expected. An example comment from a student in oceanography highlights this theme: "I know people were personally very nice [when I started] but I can't say I got too much help. I mean, I felt I had to find my own way. I sort of felt lost." In the mathematics department at this institution, students must choose their advisors after arriving and until then are often left to fend for themselves, leading to this feeling of self-direction.

A student told me, “Until you have a major, you know, an advisor, a major professor, whatever it is called, you are really in limbo. I don’t think the department does enough for those students in limbo.”

Ambiguity

Students in every department discussed feelings of ambiguity when they talked about their graduate programs. Ambiguity, like self-direction, is another part of the graduate student socialization process (Gardner, 2007). Graduate school regulations, guidelines, and the structure involved to complete the PhD is often an alien and unknown process for graduate students (Lovitts, 2001). What was fascinating to note in this study was that much of the ambiguity discussed related more often to institutional issues rather than those emanating from the department.

Indeed, discussed more often than any other topic was the ambiguity surrounding the institution’s graduate school guidelines, regulations, and particularly its paperwork. One communication student explained, “I think they could be even more structured and clear about what paperwork needs to be done, when and who needs to receive the paperwork, and who needs to sign it.” Then she laughed and said, “You should get a PhD in graduate school paperwork.” A psychology student similarly quipped:

I think, with the PhD, it doesn’t matter how much you’ve learned knowledge-wise, it’s that you learned to navigate the red tape and figured out what you should be doing, who should be on your committee, when stuff is due, when paperwork is due, having everything done on time by these arbitrary deadlines—that’s the real challenge.

For other students, the ambiguity involved with their graduate school experience was often related to the phase in which the students were currently. For students beginning their programs in Phase I, ambiguity surrounded understanding exactly what was expected of them in relation to graduate school. An oceanography student related, “I was just sort of floating around; I really didn’t know what to do.” Students in Phase II, then, were more often concerned about the ambiguity of the examination experience, an issue discussed in all of the departments. An engineering student forwarded, “I think the purpose of the exam is to test our background knowledge in our own field. That’s the purpose, I just don’t know if it’s the real one or not.” And for students in Phase III, the ambiguity related to the dissertation process and understanding exactly how one went about researching and writing a dissertation. An English student shared:

I don’t know what I’m doing. There’s no class on how to write a dissertation. The dissertation is so different from what you’re accustomed to and the most intimidating factor and what has stilted my writing so much is that I don’t know what I’m doing.

A mathematics student similarly related:

As an undergrad you see some grad students in your classes and you have a vague idea about [expectations for coursework], but when it gets to research, at least for me, it is something I have never seen before and that whole thing is really scary. I don't really know what I'm supposed to be doing.

Transition

The final theme that emerged from all of the students' interviews was that of transition. Transitioning between roles and expectations is a topic discussed in relation to the adult development literature (Goodman, Schlossberg, & Anderson, 2006; Schlossberg, 1984) but is also one other integral part of the graduate student socialization process. Inherent in the developmental process of socialization is the process of transitioning between phases (Bragg, 1976; Gardner, 2007) as well as the transition from student role to that of professional (Golde, 1998; Weidman et al., 2001).

For many students in this study, transitioning in Phase I was often difficult as the student learns to adjust to the new expectations, and as discussed previously, the ambiguity of graduate school. A communication student stated, "As a new student it's intimidating because there's all this new information." Similarly, in Phase I students are adjusting to a new culture and a new group of people. A mathematics student told me, "The first transition period it was kind of scary and kind of lonely and everything because I didn't know people." On top of this, students who move from far away to attend graduate school are facing other transitions, such as the student in psychology who shared:

It was a very difficult transition for me because I had never lived on my own and never had moved to another state or moved away from my parents. I was away from family support, away from my friends, starting school, and I hadn't been in school for three years so just getting back into being a student again and not having that emotional support.

In Phase II, then, students begin transitioning to new sets of skills, particularly those related to scholarly discourse. A communication student related, "One of the big shockers I had was the writing. It's a different kind of writing," while an English student laughingly shared:

One of the things I found intimidating was that everyone was talking about the theories and sounded like they knew what they were talking about and I was like, "Oh my God, I don't know anything!" And then somebody said, "You know, none of those people know what they're talking about. They're just bullshitting. That's just what they do." So I've learned to bullshit because you just have to.

Whereas, in Phase III, students begin to understand what is expected of them in relation to the research enterprise. An English student shared her experience, "When you transition from that dissertation stage where you don't have all the other students and your professor kind of hanging over you day-by-day, it's so profound, the change. You have to almost reinvent yourself." And an engineering student remarked, "My biggest stressor is the switch from undergraduate to graduate because for the undergraduate student the main goal for you is to finish your courses. Right now, I don't have many courses each semester so the main focus is the research."

By far, however, the students who most often discussed issues of transition were those in mathematics and engineering, those departments with the highest percentages of international students. For international students, transitioning issues in Phase I are magnified, as illustrated by one mathematics student's comments: "The whole thing: language, cultural issues, you know, it's just exhausting." Phase II and III issues are equally magnified as students are often simultaneously acquiring language skills as they also strive to acquire skills in academic discourse. Finally, students, regardless of discipline, often struggle with the expectations of the dissertation process, compounded for students who lack support and the skills essential for completion. As one engineering student related, "I think I have to adjust my style to how things just work in the U.S."

Discussion and Implications

The socialization that occurs in graduate school is a developmental process (Bragg, 1976; Weidman et al., 2001), and while student development at the undergraduate level is a well researched area, practically no research exists exploring development at the graduate level. From the analysis of the interviews with the 60 doctoral students in this study, it was evident that the students experienced a bi-level socialization experience, including developmental progression through their graduate programs and that the issues they discussed varied by the time at their program in which they experienced them as well as larger socialization to the discipline in their particular departments. Specifically, the disciplinary and departmental contexts in which the students were situated influenced their experiences, particularly in relation to the departmental climates and cultures that factored into higher and lower completion rates at this institution.

For example, while the four themes of support, self-direction, ambiguity, and transition were prevalent in all of the students' accounts, it

was obvious that these themes were dynamically different in the lower-completing departments versus the higher-completing departments. Existing literature speaks to the types of environments that tend to foster higher completion rates, including those that have clear expectations for students, those that provide social and academic integration for students, and those with supportive faculty-student mentoring relationships (Council of Graduate Schools, 2004; Golde, 2005; Lovitts, 2001). In this study, the lower completing departments were often those with the least supportive environments. International students, in particular, were a large majority of the student population in the departments of engineering and mathematics at this institution and consequently had more negative experiences in relation to transition and ambiguity and had to be more self-reliant than students in the higher-completing departments. Furthermore, the lack of support from peers, something that Weidman et al. (2001) forward as necessary to dealing with cultural and language issues, was conspicuous particularly when faculty support was also missing in these lower-completing departments. Conversely, the high-completing departments like communication and psychology also had students who discussed the four themes but often in more positive tones. Such as communication students, who spoke warmly of the “family” in the department, and the psychology students who relied greatly upon one another for support.

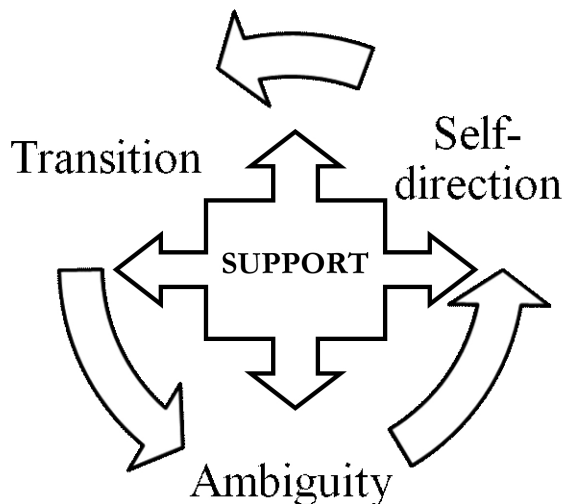


FIG. 1. The Socialization Process at Work

Figure 1 illustrates the relationship of the four themes in the socialization process. As students begin a new phase in a particular discipline, they experience both the transition to this phase as well as a great deal of ambiguity regarding the expectations for this phase of their development. The ambiguity then feeds into the need for self-direction, to compensate for this ambiguity during the transition. Support, however, can mitigate some of the negative experiences within this experience. This is to say, faculty and administrative support may alleviate some of the ambiguity through clear expectations and guidelines. Peer support may lessen the stress of a new transition to a new phase, and self-direction can be balanced with both peer and faculty support throughout all three phases as well as clarification of expectations.

The difficulty for graduate students, regardless of department completion rate, is in the obvious contradictory nature of the socialization experience. Consider the students' accounts of self-direction and support as examples: the student is expected to become independent while simultaneously maintaining support of peers, faculty, and advisors. Similarly, the inherent ambiguity of the graduate school experience makes the necessary transitions even more difficult to comprehend and master. Compounded with these contradictions are the difficulties experienced by individual students who may have specific needs, such as language difficulties, family obligations, or financial problems.

The socialization of graduate students is not monolithic. In other words, one cannot assume that the experience of one graduate student is subsequently the experience of all. The defining characteristics of institutional and departmental cultures as well as the experiences particular to a specific discipline greatly affect a student's experience while in graduate school. Moreover, the experiences of students at particular times or phases of the graduate experience are distinct. With these understandings in mind, it is important that those involved in educating and working with graduate students structure support and resources to assist students in being successful.

For example, orientation programs must be structured to better assist not only students entering a graduate program but should also take into account unique characteristics and expectations for the students and continue orientation sessions, or induction sessions, beyond the first week of the graduate experience. Many of the students, when asked about their orientation sessions, had very few positive comments; some even questioned their existence. Those who did comment on them, talked about being overwhelmed with details that later related to the ambiguity they experienced. Therefore, developmentally appropriate induction programs should be structured to meet the needs of the particu-

lar students within their development phases, and can be supplemented by social and academic integration activities such as brown bags and seminars that bring together multigenerational students in the programs as well as the faculty. Examples might include formal writing groups for students writing their dissertations in the third phase and time management workshops for students in the second phase of their program. Mentoring programs with more advanced peers should also be established in order to provide the necessary support to students who may not always feel comfortable reaching out to faculty members for assistance as well as shared office space among students for assistantship purposes.

In addition, programs must be cognizant of the unique characteristics that their students bring with them. In this study, in particular, international students often discussed a lack of support and guidance from their departments and a pronounced lack of relationships with their peers. Organizing orientations specific to these students and mentoring partnerships may go a long way in assisting these students and making them feel an important and welcome part of the department and the institution. Similarly, institution-wide programs that facilitate student success and community, such as mentoring programs as well as student organizations, may provide opportunities for engagement for students who are from foreign lands as well as for those who may be underrepresented in their programs.

Finally, policies related to graduate school guidelines should be evaluated on a regular basis. The ambiguity inherent in many of the students' accounts of paperwork, guidelines, deadlines, and programmatic structures point to an overall lack of coherence and relevance. Guidelines and paperwork can be reviewed by both administrators and student representatives. In addition, regular reviews of existing websites and catalogs/handbooks should be implemented with these constituencies. Exit interviews may also assist the institution in better understanding the needs of students who leave and graduates can also explain the structures that supported or impeded their success.

While this study was able to lend a fuller understanding to the graduate student socialization process more research is certainly needed. In particular, further explorations of disciplinary and institutional cultures upon the socialization experience must be undertaken; for example, comparing and contrasting the socialization experiences students at highly-ranked institutions with those at lesser-ranked institutions, such as this one. In addition, future studies should also investigate the socialization experiences of particular populations in relation to disciplinary cultures, specifically those of international students, a very understudied demographic in the graduate education literature. Similarly, socializa-

tion experiences compared and contrasted between high and low completion departments at different institutions should also be explored. With these increased understandings of the socialization of graduate students, researchers, administrators, and faculty alike may be better able to assist future students in higher levels of completion, and therefore success, in graduate school and beyond.

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