2016

# Examining Doctoral Attrition: A Self-Determination Theory Approach

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## Abstract

Doctoral student attrition is a troubling and costly phenomenon. Alarmingly, 40-60% of doctoral students will not complete their Ph.D. Several explanations for this high and persistent attrition rate have been discussed in the extant literature, including questioning the quality, mental health, and motivation of doctoral students. However, stricter admission standards and empirical evidence provide little support that any one of these current explanations is adequate on its own. Empirical clues suggest that Self-Determination Theory may be useful in trying to understand the doctoral attrition phenomenon. Self-Determination Theory is presented and used as a framework to identify potential causes and barriers in the doctoral student experience that may lead to drop out. These issues are discussed and preliminary suggestions for potential strategies to rectify these issues are given.

**Keywords:** self-determination theory, doctoral attrition, autonomy, education

Picture the typical doctoral student – probably a high achieving young man or woman who shows interest in a topic that few people outside of his or her chosen field are even aware of.  Individuals not privy to the inner workings of academia probably imagine this graduate student with few or no problems.  This graduate student is somewhat likely to be receiving a stipend from his or her university, is obviously very intelligent and dedicated, and is receiving a level of education that most people will never attain (i.e., a doctorate).  However, academic insiders (those aware of the graduate school process) probably picture this graduate student very differently.  For example, these insiders might be aware of the rigorous courses a graduate student must take, the high pressure to generate novel research topics, or the time consuming and sometimes competitive assistantships and fellowships that are necessary if the graduate student wishes to receive their stipend.  For academic insiders, with their knowledge of the stress and rigors of graduate school, it is likely not a surprise to learn that graduate students (doctoral students in particular) have a somewhat high rate of attrition - leaving the doctoral program before completion.  However, even when attrition is expected, the actual numbers and are quite shocking; several (slightly dated) studies place doctoral student attrition rates as high as 40 – 60%.  This attrition rate has also remained surprisingly consistent (Lunneborg & Lunneborg, 1973; Golde, 2005; Lovitts, 1996; Pauley, Cunningham, & Toth, 1999; Wright, 1964).  For the purposes of this paper, *doctoral students* will be defined as individuals earning a research intensive doctorate in any subject other than medicine.  While high attrition rates potentially exist for students obtaining a doctorate in the medical fields, discussing the medical student population is not within the scope of this paper.  Likewise, other professional and graduate students (e.g., students obtaining their master's degree) will not be the focus of this work.  Though these populations are important, they should be the subject of future research as the populations may differ in some unforeseen manner(s).

## Extant Explanations of Doctoral Attrition

### Graduate student quality

One of the more troubling and pervasive explanations offered for the high and persistent doctoral student attrition rate is that programs are

admitting low quality students. As graduate students represent a large financial investment to universities, they have sought to address the issue of doctoral attrition from this "student quality" perspective. As a result, universities have increased their already stringent admissions criteria over the years. Interestingly, these increased admission standards have had little, to no, effect on the attrition rate (Lott, Gardner, & Powers, 2010; Lovitts, 1996; Lovitts & Nelson, 2000). This suggests graduate student quality is not the cause of the high and persistent attrition rates and that another explanation/perspective is necessary.

### Mental health

Another common explanation for high and persistent doctoral attrition is the high rate of poor mental health and low well-being reported by graduate students. Indeed, the rates of poor mental health in graduate students are shockingly high, with some studies putting the prevalence at 25 - 47% in some populations (Hyun, Quinn, Madon, & Lustig, 2006; Stecker, 2004). Taking the high attrition rate (40 – 60%) and attributing it to the high rate of poor mental health makes *some* logical sense: it would no doubt be more difficult to complete a doctoral program while experiencing mental health issues than it would be while experiencing no mental health issues. However, research has not completely supported this connection (Bair & Haworth, 2004). While it is likely that mental health and well-being plays some role in doctoral student attrition, it cannot be considered adequate explanation for the phenomenon alone.

### Motivation

Motivation is the most common explanation  given for the high and persistent doctoral attrition rate. In contrast to the previous explanations of doctoral attrition (quality and mental health), there is a somewhat large body of research that supports motivation as having a role in doctoral attrition. Generally, this research finds that motivation is a strong predictor of doctoral completion, or that lack of motivation is commonly reported by individuals whom have dropped out of their perspective doctoral program (Bair & Haworth, 2004; Cooke, Sims, & Peyrefitte, 1995; Lovitts, 1996; Pauley, Cunningham, & Toth, 1999; Wright, 1964). While motivation no doubt plays a role in doctoral attrition, offering it as the only

explanation for the attrition has some serious flaws. It has been noted by a small group of researchers that explaining doctoral attrition solely with lack of motivation is unduly unfair to doctoral students, as it suggests the issue is person centered and takes blame from the university and the institutional culture (Lott, Gardner, & Powers, 2009; Lovitts, 1996; Nesheim, Guentzel, Gansemer-Topf, Ross, & Turrentine, 2006; Smith, Maroney, Nelson, Abel, & Abel, 2006).

While these and other models attempting to explain doctoral attrition are present in the extant literature, they all leave something to be desired. Each model tends to focus attention on either the individual or the institution; no model allows for a complex interplay between the individual and institution. The current work will propose an explanation for this attrition rate based on Self-Determination Theory (SDT) in an attempt to reconcile this issue; giving an equal focus to the individual and the institution. This article will focus on providing explanation and justification for SDT as an applicable explanation for doctoral attrition. The article will also attempt to provide preliminary attempts at identifying potential strategies (relevant to SDT) which could reduce this high and persistent attrition rate which could be implemented by doctoral students or doctoral programs.

### Self-Determination Theory

This paper will attempt to give a brief overview of SDT before discussing graduate student issues within the theoretical context. For a comprehensive discussion about SDT, see Ryan and Deci (2000). Self-determination theory focuses on three innate, psychological needs that an individual requires to function at their "best". Specifically, these three needs are autonomy, competence, and relatedness. The theory posits that if an individual has these needs met, he/she will be more motivated and experience better mental health than if these needs are not met, or are not met adequately (Ryan and Deci, 2000). It is important to note that all the needs work in tandem, and autonomy serves as the linchpin (i.e., an individual cannot function at their best if only the needs of competence and relatedness are met).

## *Autonomy*

Littlewood (1996) attempted to define autonomy by breaking it down and examining the components; he started with the basic definition of an autonomous person being one who can make, and carry out, decisions to govern his/her own actions. Littlewood also identified two main components of autonomy: *ability* and *willingness*. So, an autonomous person must have the ability to make independent choices as well as the willingness to do so. These components are highly dependent on the individual's environment. For example, an individual could possess the ability to govern his/her decisions but lack the willingness to do so because he/she is used to a controlling environment. Conversely, an individual could be willing to govern his/her own decisions but lack (or perceive that he/she lacks) the necessary skills. This is an interesting model as it views autonomy as the "natural" state of individuals (which fits nicely with SDT). Autonomy and autonomy supportive teachers have been associated with increased classroom performance, increased intrinsic motivation, and a stronger sense of competence across several age groups (Ciani, Middleton, Summers, & Sheldon, 2010; Garcia & Pintrich, 1996; Littlewood, 1996; Reeve, Bolt, & Yi Cai, 1999).

## *Competence*

Competence is a complicated construct; it has been confirmed (Rodgers, Markland, Selzler, Murry, & Wilson, 2014) and refuted (Hughes, Galbraith, & White, 2011) that competence and self-efficacy are distinct constructs. However, for the purposes of this work, perceived self-efficacy and perceived self-competence will be considered to have negligible differences. Competence plays a role in autonomy and is also directly related to motivation (Littlewood, 1996). Fostering competence in the classroom generally involves providing tasks for the students that are not too hard, nor too easy, and providing positive feedback on the tasks. It is important to note, however, that positive feedback will generally only improve intrinsic motivation if provided in an autonomous supportive environment (Deci, Vallerand, Pelletier, & Ryan, 1991). Competence also plays a role in internalization in SDT. An individual will be more likely to internalize a task (i.e., perform a task based on intrinsic rather than extrinsic motivation) if he/she feels skilled at performing the task (Deci & Ryan, 2000).

## *Relatedness*

Relatedness is related to attachment theory in that children will explore tasks if they have a secure attachment (Bowlby, 1979). Self-determination Theory extends this finding from attachment theory across the lifespan – positive, secure attachments (i.e., relationships) are posited to increase intrinsic motivation. A big component of SDT is the integration/internalization of extrinsically motivated behaviors into intrinsically motivated behaviors. It is posited that individuals are extrinsically motivated to perform new behaviors or tasks during his/her formative years. However, over time, the individual will begin to perform these tasks via intrinsic motivation through the process of integration and internalization (Niemiec & Ryan, 2009; Ryan & Deci, 2000). Relatedness plays a large role in encouraging individuals to integrate and/or internalize extrinsically motived tasks. In order to feel belongingness or closeness to certain people/groups of people, an individual will seek to internalize tasks that are highly valued or modeled by that person/group of people. The desire for internalization of a task (i.e., the desire to "fit in" with the individual or group that values or models the task) can stem from peers to teachers to parents (Deci, Vallerand, Pelletier, & Ryan, 1991).

## Graduate students under the SDT lens

If we consider doctoral attrition under the SDT lens, it is possible that the high attrition rate is due to the three SDT needs not being met. The high doctoral attrition rate could be directly related to low intrinsic motivation, which would support and extend past research findings regarding motivation and attrition. Interestingly, it has been shown that unmotivated students are more likely to drop courses, and by extension, drop out completely (Pantages & Creedon, 1978; Ramist, 1981; Vallerand & Bissonnette, 1992). In fact, Vallerand and Bissonnette showed that Canadian college juniors who had higher intrinsic motivation and less amotivation toward academic activities were less likely to drop a required course. Conversely, individuals with lower intrinsic motivation and more amotivation toward academic activities were more likely to drop the required course. Additionally, Ramist and Pantages and Creedon also found that motivational factors were the most common reasons given by undergraduates that had dropped out of college completely. There is also a high

prevalence of mental health issues that appear in cross-sectional examinations of graduate students (Hunt & Eisenberg, 2010; Hyun, Quinn, Madon, & Lustig, 2006; Stecker, 2004). This increased prevalence of mental health issues could directly stem from the lowered well-being experienced by individuals who are not achieving their SDT needs. Taking this potential evidence, the three needs defined by SDT should be examined in the context of graduate students in an attempt to identify what barriers may be causing the inadequate fulfillment of the SDT needs.

### *Barriers to Autonomy*

As previously discussed, each of the three needs within SDT operate in tandem. As such, autonomy is not only a direct need; it also plays roles in both competence and relatedness (Deci & Ryan, 2000). Adopting Littlewood's (1996) definition of autonomy, there are two factors that define autonomy: ability and willingness. So, a graduate student that is not autonomous will lack (or perceive that he/she lacks) the ability to make his/ her own decision or lack the willingness to make his/her own decisions. Littlewood further broke ability and willingness down into two subcomponents. Ability was broken down into *knowledge* and *skills* while willingness was broken down into *motivation* and *confidence*. The lack, or perceived lack, of ability can stem from many sources. However, the perception of knowledge and skills is highly vulnerable to the *imposter phenomenon* (IP; Clance & Imes, 1978; McGregor, Gee, & Posey, 2008).

The imposter syndrome or the imposter phenomenon is the phenomenon in which individuals that are empirically successful feel inadequate and incompetent. Individuals suffering from IP generally attribute their successes to luck or other factors outside of their control rather than personal ability (Chrisman, Pieper, Clance, Holland, & Glickauf-Hughes, 1995; Kumar & Jagacinski, 2006). The imposter phenomenon was originally posited to exist only in high achieving females but studies have shown that IP presents in high achieving males as well, albeit at lower rates (Cozzarelli & Major, 1990; Prata & Gietzen, 2007). Though no studies have been conducted examining the prevalence of IP in general academic doctoral student populations, small studies looking at the prevalence of IP in medical graduate students place the rates at (approximately) 20% for males and 40% for females (Oriel, Plane, & Mundt, 2004; Prata & Gietzen, 2007).

It is possible that the ability factor (comprised of knowledge and skills) of autonomy is barred by the experience of IP in many graduate students. As these two components (and four subcomponents) must be working in unison to achieve autonomy, it is likely that an individual suffering from the imposter syndrome would never achieve autonomy (Littlewood, 1996). Additionally, the willingness component (comprised of motivation and confidence) of autonomy is vulnerable to IP as well as institutional sources. An individual who believes himself or herself as intellectually inadequate is destined to have issues with his or her confidence. Institutional/environmental factors may also affect autonomy. For example, health issues could prevent a student from being in class, therefore preventing that student from obtaining the necessary knowledge or skills for completing important tasks. Another example would be a student who has an overbearing or controlling advisor; this student likely lacks the confidence or motivation perform tasks without provocation as he or she is rarely allowed to do so.

Taken together, it can be posited that strategies aimed at improving autonomy should focus on lessening the impact of the imposter syndrome (to improve perception of ability) and creating autonomy friendly learning environments, rather than control based learning environments. Much work has already been done in the area of identifying and creating autonomy focused environments and teachers (see, Reeve, Bolt, & Cai, 1999; Ciani, Middleton, Summers, & Sheldon, 2010; Stefanou, Perencevich, DiCintio, & Turner, 2004, for a few notable examples). Strategies outlined in these works could be applied at both the course level and the advisor level. This would provide doctoral students with autonomy fostering environments both during their coursework and with research and work done with/for their advisor. IP would also need to be addressed to foster autonomy. The group therapy methods outlined in Clance and Imes (1978) could prove a useful tool for confronting imposter syndrome as well as providing doctoral students with an opportunity to form relationships (which could potentially help students foster relatedness). In this method, individuals are made aware of the improbability that they are imposters. It also incorporates positive feedback and homework assignments. It is possible that departments or programs could offer weekly sessions to doctoral students who would wish to attend such group therapy.

### *Barriers to Competence*

Competence involves understanding and being efficacious at achieving various outcomes and tasks (Deci, Vallerand, Pelletier, & Ryan, 1991). Potential barriers to a person achieving competence are fairly straightforward as competence is directly threatened by IP. Recall that IP is the phenomenon in which successful individuals feel intellectually inferior to their colleagues. The imposter phenomenon has been associated with persons having an external locus of control, that is, these individuals attribute their successes to external influences rather than ability or intelligence (e.g., luck; Clance & Imes, 1978; McGregor, Gee, & Posey, 2008). It has also been demonstrated in the literature that perceived self-efficacy is related to locus of control, with an external locus of control leading to lower perceived self-efficacy (Judge & Bono, 2001; Phillips & Gully, 1997). As such, it can be logically concluded that a doctoral student experiencing IP would perceive their academic achievements as being a result of external forces. This, in turn, would lead to the doctoral student having low perceived self-efficacy for academic tasks, resulting in low perceived competence. Finally, this low perceived competence in the individual would undermine the other components of SDT, leading to lowered motivation and poor well-being.

Taken together, addressing IP or the external locus of control is paramount when addressing the need for competence. As before, the Clance and Imes (1978) group therapy method seems like a good choice to confront the imposter syndrome. Though the therapy already incorporates positive feedback, additional efforts could be made to provide students with more positive feedback both from advisors and courses. As positive feedback has been shown to improve self-efficacy (Chemers, Hu, & Garcia, 2001; Schunk & Swartz, 1993; Shute, 2008), it is likely that it will improve competence as well. Additionally, utilizing journaling and other cognitive-behavior therapeutic (CBT) methods have been shown to effectively shift an individual's locus of control from external to more internal (Fritson, 2008). A combination of these CBT methods, group therapy, and positive feedback should effectively reduce the impact of the imposter phenomenon.

### *Barriers to Relatedness*

Relatedness was defined by Deci, Vallerand, Pelletier, and Ryan (1991) as having secure attachments and fulfilling interactions with others in a relevant social group. Relatedness is difficult for doctoral students to achieve because of the nature of completing a doctorate. Over the course of the doctorate, a student will spend many hours studying, conducting research, writing, reading, etc. – all largely solitary activities. Even if a doctoral student is able to complete all of these tasks and has additional free time to socialize, it is unlikely that his or her peers have also completed these solitary activities and are in a position to socialize. The doctoral student experience is likely a lonely experience for many, with few opportunities to foster these fulfilling relationships with other doctoral students. Interestingly, studies that have examined this phenomenon of social isolation (or lack or relatedness) have found that doctoral students who report feeling socially isolated or "lonely" are more likely to drop out of their program (Ali & Kohun, 2007; Bain, Fedynich, & Knight, 2010). Outside of SDT, social support and social interaction have been shown to increase well-being in a wide variety of demographics (Cohen & Wills, 1985; Ishii-Kuntz, 1990; Lee & Ishii-Kuntz, 1987)

    A doctoral student who has achieved relatedness would probably socialize with his/her cohort, office mates, or other individuals from the program or department both in and out school. This doctoral student would also likely have a satisfying relationship with his/her advisor as well as other faculty within the department or program. Potential strategies to address the need for socialization (i.e., relatedness) should focus on giving doctoral students the opportunity to socialize within their program/department. These opportunities could include: orientations and scheduled social events for new students, adopting the cohort system for groups of students, providing shared work space for groups of students (i.e., shared offices), support groups for various stages of the doctoral process, and an advisor that interacts with students collaboratively (Ali & Kohun, 2007). By offering doctoral students so many opportunities to socialize and by assigning them into "groups" (i.e., cohorts), the likelihood that they form satisfying relationships with their peers should increase.

## *Limitations*

It is important to note that student accountability will play a role in the effectiveness of these strategies and no doubt plays a role in doctoral attrition in general. Programs could provide all of the proposed resources but if doctoral students choose not to utilize these services then the resources would be wasted. It should also be stated that the discussion and identification of strategies designed to foster autonomy, competence, and relatedness in this work was in no way exhaustive. This work was meant largely as a theoretical work attempting to create discussion about doctoral student attrition. As such, no empirical data was offered to substantiate the application of SDT to the attrition problem. Therefore, the focus of future research should be attempting to obtain empirical evidence that SDT is indeed applicable to the doctoral student attrition issue.

## Discussion

In this article, SDT is introduced and logically applied to the issue of doctoral student attrition. Potential strategies related to fostering autonomy, competence, and relatedness in doctoral students were then identified to offer suggestions to reduce the attrition rate and to provide potential landmarks for researchers examining this issue in the future. It is important to note that this article is not suggesting that a 0% doctoral attrition rate is achievable or desirable. However, the current persistent and alarmingly high doctoral attrition rate is an issue that needs to be addressed.

## *Applicability to Non-traditional Students*

It should also be noted that the article also does not take into account non-traditional doctoral students with its proposed strategies. Non-traditional doctoral students might include distance or online students, students with families, part-time students, or individuals who are much older than the typical doctoral student (i.e., late 20s or early 30s). Unfortunately, there is evidence to suggest that non-traditional students have a more difficult doctoral experience than traditional doctoral students (Gardner, 2008). If this theory proves applicable to traditional doctoral students its applicability to non-traditional doctoral students

should also be examined. However, if SDT was also applicable to non-traditional doctoral students it is likely that there would be significant challenges when applying the strategies identified here. The challenges associated with autonomy and competence would likely be similar to those found in traditional doctoral students, but the relatedness component of SDT would potentially be more difficult to achieve for these students. For example, consider a distance/online student, an older student, and a student with a family. The distance/online student would suffer from not being able to physically attend social functions provided by a class or department. While cohorts and support groups could be set up online, the logistics (e.g., getting everyone online at the same time) would be more difficult. Additionally, online/distance learners would not be able to benefit from having shared offices with other graduate students or attending on orientations with other students in a similar position. For older students, age and interest differences could make it more difficult to form the satisfying relationships required to satisfy the relatedness component of SDT. The barriers for students with families would likely be related to time commitment issues – these students might just not have the time to socialize outside of the classroom with their peers. Instead, their time commitments would be made to their families. Taken together, it is likely that new strategies would be needed to foster relatedness in non-traditional students.

Although this work focused on issues with doctoral students, autonomy, competence, and relatedness should be kept in mind when dealing with students of any type, as the lack or presence of these components can have significant consequences. Based on the work and arguments provided by this work, it seems logical SDT is not only applicable to the doctoral student attrition problem, but that implementation of the stated strategies could help decrease this high and static attrition rate.

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