Manuscript Preview (Introduction Only):

A Survey of Graduate Students as One Component in a Strategy for Departmental Improvement

Douglas Cook and Margaret Julias

New York University, Abu Dhabi, United Arab Emirates.

Corresponding author: Douglas Cook
PO BOX 129188,
Abu Dhabi, United Arab Emirates
+971 02 6284192
email: douglascook@nyu.edu

Abstract

Graduate student attrition results in losses that negatively affect departmental productivity. While many studies have identified factors that influence attrition, few have addressed the methodologies which departments may use to incorporate these findings to improve retention. In this article, we present a strategy for improving retention, one component of which is the need to obtain detailed local data regarding graduate student experiences. Survey results are then considered in conjunction with general research findings to identify areas of improvement that will result in high returns on invested time and resources. The design, analysis, and results of one such survey are reported.

Introduction

In today's highly competitive academic environment, schools compete fiercely to attract the highest caliber graduate students. However, attracting capable students is not enough; universities must also retain such students. National rankings are based on research productivity and the total number of awarded Ph.D. degrees (Jaschik 2010, Morse and Flanigan 2013). Unfortunately, attrition rate for United States Ph.D. programs is between 40-50% (Smallwood 2004). In engineering, only 64% of Ph.D. students complete their degrees (Grasso et al. 2009). According to a University of Notre Dame study of doctoral student attrition, decreasing attrition by 10% would save $1 million/year in stipends (Smallwood 2004). In addition to financial losses, graduate student attrition also results in disappointment for the student, wasted research funding for the professor, and lost opportunity to perform research and publish research findings (Tucker et al. 1964, Cook and Swanson 1978, Long 1987, Gillingham et al. 1991). There seem to be no positive outcomes of graduate student attrition.

Concern about graduate student attrition/retention is not new, and numerous studies have addressed this issue. The subject was first investigated in the 1960s (Berelson 1960, Tucker et al. 1964), but became a serious topic of discussion and research in the 1980s. A survey study of doctoral students at Georgia State University encompassed students attending from 1970 to 1980 (Dolph 1983), and a longitudinal cohort study of graduate students was conducted at UCLA during the late 1970s (Benkin 1984). These were followed by a study on the non-completion of graduate students (Blume and Amsterdamska 1987), and a model of progression toward graduate degrees (Girves and Wemmerus 1988). Almost immediately, two factors were identified in connection with retention/attrition: student-advisor relationships and the culture of the department (sometimes classified as "field of study"). At the same time, the decision to drop out of graduate school has been reported to be highly complex and individualistic (Tinto 1987, Tinto 1993). Factors influencing this decision range from personal relationships to lack of background in a given area. Hence, a substantial amount of research has been conducted on graduate student attrition (Cooke et al. 1995, Lovitts 1996, Golde 1998, Lovitts 2000, Bair and Haworth 2004, Golde 2005) and focused on examining specific factors affecting student attrition

(Bernhardt et al. 2000) such as funding (Bowen and Rudenstine 1992, Ethington and Pisani 1993, Nettles and Millett 2006), discipline of studies (Bowen and Rudenstine 1992, Golde 2005, Nettles and Millett 2006), gender (Berg and Ferber 1983, Herzig 2004, Maher et al. 2004), race (Margolis and Romero 1998, Ellis 2001, Herzig 2004), student-advisor relationship (Clark and Corcoran 1986, Lovitts 2001, Nettles and Millett 2006), test scores (House and Johnson 1993, Nettles and Millett 2006), and social experiences (Golde 1998, González 2006, Gardner 2007). For a comprehensive discussion of issues contributing to graduate student attrition and retention, we suggest the impressive meta-synthesis of 118 studies on this topic conducted by Bair and Haworth (Bair Carolyn et al. 2004, Bair and Haworth 2004). Despite rigorous studies on this topic, attrition rate remains a disturbing 50% (Cassuto 2013).

Significance of retention

As mentioned, significant changes in overall retention rates have not yet been realized (Lovitts 2000, Smallwood 2004, Cassuto 2013) and the issue of attrition seems to be a persistent problem that haunts department heads, deans, and university administrations. Perhaps our ability to solve this problem depends upon our perspective in approaching the problem. Instead of viewing high attrition rates as a constant challenge, we can instead view increased retention as an opportunity for increased competitiveness. In particular, we believe that increased retention can be viewed as a pro-active tool in the constant struggle to attract the best graduate students, increase the number of publications per research grant, and attract research funding. As we know, departments compete with their counterparts at similar institutions. Students are one type of "currency" in higher education, and every professor knows that a great student is worth three (or more) mediocre students. One strategy that departments can utilize is to use "attrition/retention" rates as a recruiting tool. It is not overly optimistic to assume that intelligent graduate students are rational consumers. If one department has a higher rate of retention and degree completion than its competitors, it seems reasonable that this department can attract better students, and may even be able to draw students from more highly ranked departments. Furthermore, by increasing retention, the department saves grant money, reduces losses associated with knowledge, turns out more

graduates, and thus more research papers. In the end, departments will benefit from this "nexus of opportunity". Hence, we believe that increasing retention is not only financially and strategically beneficial to the institutions, but also educationally beneficial to the students (in many ways), and it thus provides an ideal opportunity for implementing educational research.

Improving retention

"How can a department most effectively increase student retention?" To help answer this, one can turn to the journals for research findings. After all, peer-reviewed research studies in top journals represent the best thinking from the best experts using state of the art methods. Results of such studies are expected to be reliable, repeatable, and provide generalized information on issues surrounding student retention. However, this appropriate implementation of research findings may not be entirely straightforward.

The tendency in recent years has been toward a more scientifically rigorous study of education (Johnson and Daugherty 2008, Chou and Chang 2010). To achieve the scientific ideals of generalized results, repeatability, and reliability, educational studies have become larger in scale. Contemporary studies now utilize more subjects, often including samples from multiple institutions. Smaller studies are criticized (even rejected from publication) since they produce location-specific results that are not likely to be reproduced in another setting. In spite of the many distinct advantages of large scale studies, something strange and unexpected happens when we attempt to apply research findings in a local setting. Every local setting naturally differs from the "average department," which rather than an actual entity is a nontangible abstraction. Since no actual department will ever be truly "average", it stands to reason that the effects observed and reported in large research studies are never totally relevant to any single department. Thus, in an ironic twist of fate, the rationale for large-scale studies now presents a problem: the results of such studies may or may not be applicable in an individual department! However, assuming that the results of large-scale studies are correct, the laws of probability would seem to suggest that the best strategy would be to apply generalized results directly. However, probability only operates reliably

when we are able to apply the strategy over and over again. Large universities may have large enough populations to justify the direct application of generalized results, but when decisions are made at the department level (and these may constitute the majority of important policy decisions which affect graduate students), location specific information cannot be ignored.

The importance of site-specific information comes into sharp focus when we consider the highly competitive nature of modern higher education. Departments that compete fiercely with each other for every possible advantage might be shocked to discover that applying generalized results directly, in fact, means they are using identical strategies. In this scenario, the benefits to an individual department may depend less on how exceptional a department is, but upon how "average" the department is. This is surely not an optimal approach. To achieve optimal competitive advantage, individual departments should be fully informed of all relevant educational research, and then complement this information with an assessment of relevant local circumstances. Local information is critical because it can be used to assess which findings and conclusions from educational research will be most beneficial to the department. By using both generalized information and localized data, the department can design a unique strategy that will increase the chances of success and produce improvements most efficiently.

This study presents an example of the strategy outlined above. We reviewed relevant research on student attrition/retention and then designed a survey to assess departmental performance in areas that are relevant to graduate student retention. The survey was administered during two years, and we report on the results that were found to be relevant to retention, as well as on the methodology used to design the survey. Finally, we conclude this study with suggestions for survey implementation, and continuous departmental improvement.

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