ARE GRADUATE PROGRAM COMPLETERS READY FOR SCHOLARLY TASKS?

ABSTRACT

The publish or perish mantra among faculty in academia has received a lot of attention and research compared to doctoral students about to enter academia. **Objective**: This article addresses the question of doctoral students' readiness for scholarly tasks. Scholarly tasks include publication and presentation of articles at conferences. **Method**: Data for this study was collected from 388 doctoral program completers from 2012 to 2014 at a research university. A productivity score was generated for each participant as well as personal and academic characteristics and various analysis were conducted to determine variables that explained a significant portion of the variance in the productivity of the doctoral program completers. **Results**: The results showed that international students were significantly different from their US citizen counterparts in terms of their productivity. Secondly, scholarly productivity was significantly different by a doctoral student's major, with students majoring in Chemistry having the highest mean productivity scores followed by doctoral students in Mechanical Engineering. **Conclusion**: Even though majority of the doctoral program completers did not have an internship during their graduate education, those who did, had significantly higher productivity score than those who did not. In the final Model of the hierarchical regression, four out of twelve variables helped to explain the variance in the doctoral students' productivity. **Application**: A Significant variable in preparing for the workforce is having an Internship. The results and implications for future research and practice were discussed.

Keywords: doctoral program completers; work readiness; graduate publication; conference attendance.

Publish or Perish – Anonymous

The emphasis on research publication is of perennial importance to the academy for many years. Research, however, among graduate student populations is underrepresented in empirical studies, especially in regard to programs that will facilitate publication such as writing groups (Cuthbert & Ceridwen, 2008). Most studies done on this topic have focused on university faculty's scholarly productivity (Baird, 1991; Bland & Ruffin, 1992; Shin & Cummings, 2010). The emblematic imperative "Publish or Perish" is ubiquitous in academe, with some attributing its first use in 1932 to Harold Jefferson Coolidge in his book Archibald Cary Coolidge: Life and Letters. Some prefer to cite its reference in a scholarly work from 1938 by the Association of American Colleges bulletin (Association of American Colleges Bulletin, 1938). Logan Wilson is also noted for using the phrase in "Academic Man: A study in the sociology of a profession" in 1942 (Garfield, 1996).

Gradually, but not surprisingly, the phrase is now a graduate-school mantra and a common admonishment in faculty-student dialogues. Even though some graduate programs encourage their graduate students to publish a research article or two prior to graduation (Lei & Chuang, 2009); few studies have been conducted on the scholarly tasks that doctoral program completers engage in during their graduate education. The goal of a quality graduate education in higher education is not only to sharpen the research skills of students and train them in making research-based decisions, but also for them to ultimately gain employment or use these skills to solve problems. Upon completing their programs, doctoral graduates typically engage in scholarly tasks at some level either in academic settings or non-academic settings. These activities include publication of articles in journals, magazines, websites, industry blogs, writing of books or book chapters, and attending conferences. Those that are employed in very competitive university faculty positions are faced with tenure.

The graduate student population in higher education is on the ascendancy compared to the undergraduate population. According to US Department of Education, National Center for Education Statistics, there is a projected increase of 20% in the enrollment of students aged 25 to 34 years in degree granting institutions between 2010 and 2021. For students who are 35 years and above, an increase of 25% is projected; compared to an increase of 10% for students aged 18 to 24 years. In addition, enrollment for post-baccalaureate students is projected to increase by 19% as compared to 14% for undergraduate students for the same 2010 to 2021 period (Hussar, W.J., and Bailey, T.M., 2011).

Review of related literature

A principal component of the education and training that graduate students receive is engaging in scholarly activities. Some of these scholarly tasks occur as a result of collaboration with faculty especially in the Science, Technology, Engineering, Arts and Mathematics (STEAM) fields. These scholarly tasks thus prepare graduate program completers for largely tenure-track positions.

Conceptual framework

A useful framework that conceptualizes training and preparedness of graduate students for scholarly task is provided by Weidman, Twale, and Stein (2001). This framework addresses the processes that enable graduate students to acquire the knowledge, skills and values that will make them successful in their academic profession. Having four stages of anticipatory, formal, informal and personal; each stage, though interactive, must occur simultaneously to engage the graduate student into the culture, knowledge and profession of those around the graduate student. (See Weidman, Twale, and Stein (2001) for further reading). In addition, the principles of human capital theory (Becker, 1993) can also explain the productivity of faculty and graduate students. The acquisition of skills, the type of education sought, trainings that the individual is willing to undergo as well as the values and the motivation that drives the individual; with the hope that there will be return on investment. Mullen (1999) however alluded that "Students say that they have had little guidance in the writing process and have not been trained adequately to write for academe. … They enter professional fields without having mastered a skill that is essential to the development of their identities and careers" (p.28).

Factors related to graduate student research productivity

There are a number of contributing factors that help or hinder the preparedness of graduate students for scholarly tasks. A review of the extant literature, however, showed mixed results regarding gender, race and age factors. Most of these studies, however, have been focused on faculty and not graduate students. For example, the productivity puzzle regarding why one gender performs better than the other dates back to the 1980s where Cole and Zukerman (1984) indicated that, more than 50 studies at that time showed a trend, whereby female faculty publish less than their male counterparts holding age and other factors constant. This trend according to Xie and Shauman (1998) has, thereafter, declined in the 1990s and that any gender differences was a result of personal characteristics, structural positions and marital status. Joy's (2006) study on scholarly productivity from 98 universities summarized this gender differences as "Males tend to publish more than females during the initial push for tenure, but not thereafter; females, unlike males, tend to increase their publication rates as they mature professionally" (p. 346). Although most of the studies on scholarly productivity and race seems to concentrate on the US population and among faculty, the general trend has been that minority race groups tend to engage less in scholarly tasks than their majority race counterparts (Carmen & Bing, 2000; Hopkins, Jawitz, McCarty, Goldman & Basu, 2013).

Regarding nationality variable, Weber (2012) indicated that faculty members that are foreign born spend more time on research and are thus scholarly productive, comparatively, to their US-born peers. Previous studies (Hunt, 2009; Mamiseishvili & Rosser, 2010) also found similar results citing motivation (Weiner, 1992), cultural and family standards (Taylor & Stern, 1997) and keeping the H1 visa status (Finn, 2003) as reasons for this tendency among international students.

While some majors or fields of study are marginally sustained by research activities and thus have research papers to present at conferences or publish in journals, scholars have been criticizing graduate programs for inadequately preparing these students in the trade of publishing. These critics argue that this poor preparation can be seen in newly hired assistant professors on tenure-track (Brown, 2012). Belcher (2009) observed that "Few graduate students in the humanities can name a professor who has discussed the difference between writing for the classroom and writing for a journal. Even fewer can name a professor who has advised them on how to select a journal for submission or how to work editors" (p.190). As a result, in the fields of Psychology, Human Development and Education, only 5% of graduate program completers are employed in PhD granting departments (Byrnes and McNamara, 2001).

Apart from these characteristics, the individual student plays a major role in his or her career planning. Byrnes and McNamara (2001) stated that, "in order for an individual to get hired, he or she [the student] needs to be highly active in the areas of publishing, grants, and editorial work" (p. 337). It is arguable that, "publishing success or productivity is often the measuring stick in academia" (Mayrath, 2008, p. 41). Being active connotes a responsibility on the part of the student to seek, and take initiatives which otherwise may not be directly offered. Kim and Karau (2010) have argued in their study that the individual creative personality of doctoral students may be positively associated with research productivity. Using a creative personality index score in their study (as used in Oldham & Cumming, 1996); their results however showed that creative personality did not explain significant variability in research productivity of the doctoral students over and above their demographic variables. Kim and Karau (2010) did tested for the influence of faculty support, family and friend support, support from colleagues, research resources as well as workload pressures. Only the faculty support variable had a significant positive relationship with research productivity after controlling for demographics and personality factors. Having access to faculty as well as access to research facilities of the faculty outside of the classroom for publication purposes could also influence the productivity of graduate students. Previous educational research by Weidman and Stein (2003) also found similar results.

Another factor, though subtle and often neglected, is career guidance. It is often argued that graduate students by default, assume professional roles upon graduation as a result of the socialization they receive in graduate school (Luzzo, 2000). However, more and more graduate students use graduate school to explore career options because of the diverse experiences and sometimes different undergraduate degrees compared to their graduate degrees. There is therefore an emphasis for career guidance for doctoral students as more and more of such students reported that they do not consider themselves well prepared for faculty roles and tasks (Golde & Dore, 2001). Apart from career guidance, career centers also serve as avenues for internship opportunities and part-time jobs. What is yet to be determined is whether graduate students maximizes these services or whether the graduate students are satisfied with the services and the opportunities presented by these centers.

Therefore, the purpose of this study was to determine the scholarly productivity of graduate program completers in the southeastern part of the United States from 2012 to 2014. To achieve this purpose, four research objectives were examined in this study. These included to:

1. Describe doctoral program completers at a research university on the following characteristics:

    a) Domestic or Foreign Student status
    b) Primary major
    c) Access to faculty
    d) Satisfaction with career center
    e) Access to facilities
    f) Whether or not they had an Internship
2. Determine the research productivity scores for the doctoral program completers.

3. Determined if a relationship existed between research productivity and the selected characteristics.

4. Determine if a model exists explaining a significant portion of the variance in research productivity of doctoral graduates from the selected independent variables.

Method

Participants

The data used in this study were 388 graduating doctoral students who completed the Graduating Student Survey from 2012 to 2014. These participants have completed their graduate programs in a research university with high or very high research activity according to the Carnegie classification system (Carnegie Foundation for the Advancement of Teaching, 2012).

Procedures

The Graduating Student Survey was administered by the Research University to all graduate program completers each semester. The survey contained personal and academic characteristics of the graduate program completers and items that measured their scholarly activities. Approval for this study was granted by the Institutional Review Board of the Research University. This data was retrieved from the archived data files at the research university and transferred to a computerized recording form. All traceable and identifiable information (school ID, social security numbers, age, gender and race) were removed prior to data retrieval as part of the regulations.

A scholarly productivity score was computed from the scholarly activities reported by the students from the time of enrollment to completion of their graduate programs. These scholarly activities were publishing articles, submitting book manuscripts or article manuscripts to journals and participation in conferences. The researchers assigned a score to each tasks (11 items) within the range of 1-10. Using a Delphi method, these scores were then reviewed and rated by 7 faculty that were purposefully selected from different departments and current graduate students. These faculty included males and females from a full professor status to an assistant professor. Their departments included Psychology, School of Human resource and workforce development, School of Education and the College of Agriculture. A total of 4 doctoral students were also included from these departments in the pool. The ratings were then analyzed to determine the intra-class correlation coefficient. The intra-class correlation coefficient results showed that there was a high degree of reliability between the ratings of the 11 items. These items are presented in Table 1.

Table 1.

Assigned values to productivity tasks of graduate program completers at a research university from 2012 to 2014

Scholarly activities	**Score**
More than one refereed journal paper published	6
One refereed journal paper published	4
Participation in Three or more Conferences	4
More than one refereed journal paper submitted	2
Book manuscript submitted	2
Participation in Two Conferences	2
One refereed journal paper submitted	1
Participating in One Conference	1
Publication uncertain	0
Will not publish	0
No Participation in Conferences	0

The average measure ICC was .997 with a 95% confidence interval from .993 to .999 (F (10, 100) = 316.79, p<.001. This result of the two-way random consistency thus showed that 99% of the variance in the mean of these raters were real.

Results

Objective 1

The description of the graduate program completers in terms of whether or not the student is a US citizen, Primary major, Access to faculty, Satisfaction with career center, Access to facilities and whether or not they had an Internship is presented in Table 2.

Table 2
Description of 2012-2014 graduate program completers at a Research University

Variable	N	*M*	%	*SD*
Degree level				
PhD	388		100	
Whether or not US citizen [a]				
US Citizen	226		58.5	
International	160		41.5	
Total	386		100.0	
Primary major [b]				
Chemistry PhD	30		7.7	
Psychology PhD	26		6.7	
Mechanical Engr. PhD	23		5.9	
Mathematics PhD	20		5.2	
Human Resource Educ. PhD	18		4.6	
Access to faculty [c]	371	4.01		1.11
Satisfaction with career center [d]	372	3.20		0.88
Access to facilities [e]	371	3.97		1.09
Had an Internship				
Yes	52		13.4	
No	335		86.6	
Total	387		100	

Note: [a] 2 students did not provide this information
[b] Only five majors with highest n presented
[c, d] Measured on a Likert-type scale of 1-5, where 1=Strongly Disagree, 5= Strongly Agree
[e] Measured on a Likert-type scale of 1-5, where 1=Dissatisfied, 5= Satisfied

Of the 388 doctoral students, the majority were US citizens. The primary major reported by the largest number of participants was Chemistry followed by Psychology; and only 14% had an Internship during their graduate program.

Objective 2

The results showed that the scholarly productivity score of the graduate program completers N= 388 ranged from 0 to 10 (M = 4.99, SD = 3.63).

Objective 3

The third research objective answered the question whether there was a relationship between their scholarly productivity and the selected independent variables.

a) There was a significant difference by whether a doctoral program completer was a US citizen or an international student ($t_{(384)} = 2.199$, $p = .028$, $d = 0.23$). This difference was such that international

doctoral program completers (M = 5.48, SD = 3.57) tended to have higher productivity scores than US citizen doctoral program completers (M = 4.65, SD = 3.64).

b) Primary major
Only the top five majors were used for this analysis. Majors with less than 4% of the doctoral students were therefore not included. One way ANOVA was used to compare the top five majors on their productivity scores. The Levene's test for equality of variance showed that variances were homogeneous in the groups (F (4, 112) = 2.162, p = .078) Table 3 shows the sample sizes, means and standard deviations. As can be seen from the table doctoral students in Chemistry had the highest mean productivity scores followed by doctoral students in Mechanical Engineering.

Table 3
Group sizes, Means and Standard Deviations of productivity scores by the majors of graduate program completers at a Research University.

Majors of doctoral students	*n*	*M*	*SD*
Chemistry PhD	30	6.97	2.41
Mechanical Engr. PhD	23	6.65	3.20
Psychology PhD	26	5.20	3.48
Mathematics PhD	20	2.30	2.23
Human Resource Educ. PhD	18	1.50	2.50
Total	117	4.87	3.52

The one-way analysis of variance results showed significant differences between the majors of graduate program completers on their productivity scores (F (4, 112) = 16.987, p < .001, η_p^2 = 0.38. The effect size for this analysis (η_p^2 = 0.38) suggested a very large effect according to Cohen's (1988) convention, that is 38% of the variance was due to their majors. Post hoc analysis using Tukey's HSD showed that productivity score was significantly higher for the doctoral students majoring in Chemistry, Psychology, and Mechanical Engineering than those majoring in Mathematics (p < .001, p = .007, p = .001) respectively and those doctoral students majoring in Human Resource Education (p < .001, p < .001, p < .001) respectively. There were no other significant differences between the groups.

c) In determining the relation between having access to faculty and the productivity of the graduate program completers, a Pearson product moment correlation results showed a non-significant correlation (r = .092, N=371, p = .078). Graduate program completers who reported that access to faculty was appropriate to their graduate education did not have significantly higher productivity scores than those who reported otherwise.

d) In terms of satisfaction with the career center and graduate program completers productivity, there was also a non-significant correlation (r = -.044, N= 372, p = .398). That is graduate program completers who reported that they were satisfied with the career center did not have higher productivity scores than those who were dissatisfied.

e) Having access to facilities also showed a non-significant correlation with productivity of the graduate program completers (r = .052, N= 371, p = .318). That is, graduate program completers who reported that having access to facilities was appropriate to their graduate program did not have higher productivity scores than those who reported otherwise.
f) Lastly, there was a significant difference by whether a graduate program completer had an internship during their graduate program or not ($t_{(384)}$ = 2.783, p = *.006*, d = 0.43). This difference was such that doctoral students who had an internship during their graduate program (M = 6.29, SD = 3.27) tended to have higher productivity scores than those doctoral student who did not have an internship (M = 4.80, SD = 3.66).

Objective 4

To accomplish objective four, the variables were recoded and a hierarchical regression was conducted to determine whether a significant portion of the variance in doctoral students productivity can be explained from a) whether or not the doctoral student was a US citizen or international student, b) whether or not the student is a Chemistry major, c) whether or not the student is a Mechanical Engineering major, d) whether or not the student is a Psychology major, e) whether or not the student is a Mathematics major, f) whether or not the student is a Human Resource Education major, g) whether or not the student had an Internship, h) whether or not the student had access to faculty expertise, i) whether or not the student was satisfied with Career center, and j) whether or not the student had access to facilities. Personal control variables were entered into the model first. These were US citizen or international student, and their Majors (Chemistry, Mechanical Engineering, Psychology, Mathematics and Human Resource Education). This model was significant (F (6, 359) = 7.328; p < .001. This model explained 10.9% of the variance in doctoral graduate students' productivity. After the following predictors were entered in step two (Having an Internship, Access to faculty expertise, Satisfaction with career center, Access to facilities); the model as a whole explained 13% of the variance in doctoral students productivity (F (10, 355) = 5.326; p < 0.001). The entry of the variables (Access to faculty expertise, Satisfaction with career center, Access to facilities) in step two explained an additional 2.1% after controlling for the personal variables (US citizen or international student, and their Majors (Chemistry, Mechanical Engineering, Psychology, Mathematics and Human Resource Education) (R^2 Change = 0.021; F (4, 355) = 2.178; p = 0.071). In the final model of the hierarchical regression, four out of the 10 predictors were statistically significant, with "Chemistry Major" having the highest Beta value (β = 0.152, p < 0.003) followed by "Having an Internship" (β= 0.126, p < 0.126). Mathematics Major had a negative Beta value (β= -0.159, p < 0.002) as well as Human Resource Education Major (β= -0.180, p < 0.001) inferring that being a Mathematics Major or Human Resource Education major decreases their productivity, ceteris paribus (see Table 4).

Table 4
Summary of hierarchical regression analysis for variables predicting doctoral students productivity at a Research University

Variable	R	R^2	ΔR^2	*B*	*SE*	*β*	*t*
Step 1	0.330	0.109	0.109				
US citizen or international student				-0.375	0.391	-0.051	-0.960
Chemistry Major or not				1.887	0.687	0.139	2.749**
Mechanical Engineering major or not				1.456	0.789	0.095	1.845
Psychology Major or not				0.292	0.748	0.020	0.391

Mathematics Major or not				-2.736	0.826	-0.167	-3.313**
HRE major or not				-3.390	0.883	-0.196	-3.840***
Step 2	0.361	0.130	0.021				
Having an Internship				1.340.	0.553	0.126	2.423*
Access to faculty expertise				0.253	0.202	0.077	1.250
Satisfaction with career center				-0.240	0.208	-0.058	-1.153
Access to facilities				-0.027	0.208	-0.008	-0.129

Note. Statistical Significance: * $p < .05$, ** $p < .01$, *** $p < .001$

Discussion

In this study, international students scored higher when it comes to their scholarly productivity than their US counterparts. This result is consistent with previous studies on this subject. For example, Price & Price (2006) concluded that international students by and large have the highest rates when it comes to publication during their graduate school days and within the first three years after graduation. Citing Grove and Wu (2005), in Economics alone, this rate is as high as 24%. Competing reasons for this trend can be traced to admission criteria for graduate schools. While the admission criteria as well as funding is more favorable for US citizens, the rest of the spots and funding available is competed for, by international students. As a result, only the brightest and the promising foreign students get admitted. In addition, in order to remain in their program of study, complete, and possibly get a job in the US, (or to secure a job offer back home in their respective countries) these international students have the tendency to publish and attend conferences more and beyond the domestic students in order to stay competitive. One can also argue that, comparatively, the number of international students in the departments with higher productivity scores outweigh that of their US colleagues. This trend is also confirmed with studies on faculty productivity. Webber (2012) concur that not only do foreign born faculty spend more time on research, their productivity is higher and the number of foreign born full-time faculty has been rising. This tendency could also explain the notion that current students who intend to join academia may be publishing at a higher rate as graduate students than their peers two or more decades ago (Joy, 2006).

The findings on their majors suggest that fields that have a lot of ongoing research projects such as Chemistry, Psychology and Mechanical Engineering have shorter turnaround time for experimentation, data collection and results to write-up and ultimately disseminate these findings in journals than fields like Human Resource Education and Agriculture. As Katz and Martin (1997) hinted, there has been increasing effort in the sciences for research collaboration, that is both the graduate student and the faculty work together towards the same goal – to have a publication. This publication thus meets tenure requirements, funding expectations, recognition for the faculty. On the other hand, the graduate student also makes the shortlist of faculty search committees upon graduation. Quantity and quality of publications or presentation also vary from department to department usually depending on the emphasis placed on scholarly productivity expectations of graduate students.

Graduate students who had an internship in this study also demonstrated higher scholarly productivity than those who did not participate in any form of internships. Internships, also referred to as student engagement, community-university partnerships, service learning and experiential education in other contexts

goes beyond developing professional skills and networking opportunities with potential employers. A valuable competency that graduate students who participate in internships develop is research self-efficacy – that is a graduate students develop confidence to effectively initiate, develop and produce research. Szymanski, Ozegovic, Phillips, & Briggs-Phillips (2007) indicated that "internship research training environments could influence research interest and scholarly productivity indirectly by enhancing research self-efficacy and research outcome expectations" (p. 1). It is important that graduate programs and colleges ensure that the nature of work that graduate students will engage in these internships supplements the knowledge and skills students are receiving instead of solely service tasks geared towards generating of profit to the organization. Secondly all stakeholders need to agree on compensation such as academic credit, as well as the objectives and guidelines for the internship. It is also important that an onsite supervisor is assigned to facilitate graduate students exposure to best practices in the field who will also provide feedback in a mentorship capacity. Finally, internships should be evaluated on an ongoing basis between the faculty, graduate student and the onsite supervisor with the possibility of the graduate student sharing experiences as well as identifying areas for improvement. These collaborations can be followed with a research report, thus bridging the gap between theory and practice.

Conclusions

It is important to point out that both publication of journal articles and participation in conferences can occur simultaneously and it might be difficult to separate them. Graduate students usually attend conferences to present papers and research that may end up as a publication in a journal. The Graduate school in most Research Universities usually fund (partially) those who are presenting a research paper at those conferences instead of being mere attendees. Therefore, the researchers recommend that graduate students should be encouraged to go through the process of submitting one or more refereed journal articles prior to graduating and allocate funding for presenting research findings at conferences. The graduate school, colleges and departments in Research Universities should pay publication costs and adopt recognition of publications of graduate students through monetary or non-monetary awards such as plaques, citations and 'wall of graduate publishers' in the lobby of graduate schools.

Overall, graduate program completer's productivity in this study were quite low. In the literature, there are mixed reviews on graduate students' publication ambitions. While some scholars abjure graduate students to publish until their final accreditation, others call for graduate programs to actively teach the students how to get published. Even though graduate students' publications may have room for improvement, going through the process of publication and presentation could increase the self-efficacy of graduate program completers to engage in scholarly activities as a faculty. Majors or departments that tend to score low on scholarly productivity could emphasize collaboration within their departments as well as across departments and Universities on research especially taking on graduate students along the scarce research endeavors. Tenured faculty could also take the initiative to lead research collaboration with fledgling scholars as well as seek internships for graduate students to build their self-efficacy. This study did not follow-up on graduate program completers who had higher productivity scores and their success as faculty upon graduation. Future research would do well to follow graduate students after graduation.

Limitations and recommendations

This study is not without limitations. First, as with any self-report measures, there is the possibility for bias with the rating on scholarly productivity measurement by the faculty from the self-selected departments. Although self-reports are generally considered accurate (Tourangeau et al., 2000); faculty at different levels (assistant, associate, full professor) may favor different aspects of productivity. In addition, some disciplines (e.g., computer science) see conference presentations or proceedings as equal to or better than a journal publication. Secondly, the graduate students self-reported their scholarly productivity and access to faculty. There is no guarantee that some responses could be over or under-estimated at the time of data collection, since

there is generally sometime between submission of articles to actually getting it accepted and published. In addition, having access to faculty cannot be interpreted solely as engaging in projects towards publication or presentation. Thirdly, in this study, scholarly activities were limited to publishing articles, submitting book manuscripts or article manuscripts to journals and participation in conferences. Future studies should expand this list to include reviewing articles in a journal and serving as an editor to a journal or chairing a conference session and organizing undergraduate research symposiums etc. In addition, future studies should confirm empirically, student's actual productivity and determine single or co-authorship of research articles as well as the status and quality of the journal than relying on self-reports. The depth and frequency of contact with faculty should also be measured. We also recommend the reduction of faculty workload to courage faculty to engage in more research, publication and grant sourcing with graduate students. Attracting talented graduate students from around the world could also increase scholarly productivity in departments as well as contribute to the knowledge in research universities. The relative contribution of doctoral students in research and publication contribution with faculty and peers can also be assessed in future studies.

References

Association of American Colleges (1938). Association of American Colleges Bulletin Proceedings, *24*, 465.

Baird, L. L. (1991). Publication productivity in doctoral research departments: Interdisciplinary and intradisciplinary factors. *Research in Higher Education, 32*(3), 303-318. http://dx.doi.org/10.1007/BF00992894

Belcher, W. L. (2009). Reflections on Ten Years of Teaching Writing for Publication to Graduate Students and Junior Faculty. *Journal of Scholarly Publishing*, 184-200.

Bland, C.J. Ruffin, M.T. (1992). Characteristics of a productivity research environment: Literature review. *Academic Medicine, 67*(6), 385-397.

Brown, W. C., (2012). Developing Professionally through Graduate Student Publications, *In Progress,* 2. Retrieved on June 30, 2015, from http://inprogressjournal.net/archives/current-issue/developing-professionally-through-graduate-student-publications/

Byrnes, J. P., & McNamara, C. C. (2001). Evaluating doctoral programs in the developmental sciences. *Developmental Review, 21*(3), 326–354.

Carnegie Foundation for the Advancement of Teaching, Carnegie Classifications Data File, (February, 2012). Classifications. Retrieved on May 2, 2015, from http://carnegieclassifications.iu.edu/.

Cole, J. R., & Zukerman H. (1984). The productivity puzzle: Persistence and change patterns of publication of men and women scientists. *Advances in Motivation and achievement, 2*,119-125.

Cuthbert, D. & Ceridwen S. (2008). Getting a GRIP: Examining the outcomes of a pilot program to support graduate research students in writing for publication." *Studies in Higher Education, 33* (1), 77-88.

del Carmen, A., & Bing, R.L. (2000). Academic productivity of African Americans in criminology and criminal justice. *Journal of Criminal Justice Education, 11*, 237-249.

Finn, M. G. (2003). *Stay rates of foreign doctorate recipients in US, 2001*. Retrieved at: http://www.abtassociates.com/reports/stayrate03.pdf

Garfield, E. (1996). What is the primordial reference for the phrased publish or perish? *The scientist, 10* (12):11.

Golde, C.M. & Dore, T.M. (2001). At Cross Purposes: What the experiences of doctoral students reveal about doctoral education (www.phd-survey.org). Philadelphia, PA: A report prepared for The Pew Charitable Trusts

Grove, W. & Wu, S. (2007). The search for talent: Doctoral completion and research productivity of economists. *American Economic Review 97*(2), 506-511.

Hopkins, A., Jawitz, J., McCarty, C., Goldman, A., & Basu, N. (2013). Disparities in publication patterns by gender, race and ethnicity based on a survey of a random sample of authors. *Scientometrics, 96*(2), 515-534. doi:10.1007/s11192-012-0893-4

Hunt, J. (2009). Which immigrants are most innovative and entrepreneurial? Distinctions by Entry Visa. *Working paper 14920, National Bureau of Economic Research*. Cambridge, MA. Retrieved at http://www.nber.org/papers/w14920.

Hussar, W.J., & Bailey, T.M. (2011). *Projections of Education Statistics to 2020 (NCES 2011-026)*. U.S. Department of Education, National Center for Education Statistics. Washington, DC: U.S. Government Printing Office.

Joy, S. (2006). What should I be doing, and where are they doing it?: Scholarly productivity of academic psychologist. *Perspectives on Psychological Science, 1*(4), 346–364.

Katz, J.S., & Martin, B.R. (1997). What is research collaboration? *Research Policy, 26*, 1-18.

Kim, K. & Karau S.J. (2010). Working environment and the research productivity of doctoral students in management. *Journal of education for business, 85*,101-106.

Lei, S. A., & Chuang, N. K. (2009). Research collaboration and publication during graduate studies: Evaluating benefits and costs from students' perspectives. *College Student Journal, 43*(4), 1163-1168.

Luzzo, D. A. (2000). Career Development of Returning-Adult and Graduate Students. In D. A. Luzzo (ed.), *Career Counseling of College Students.* Washington, D.C.: American Psychological Association.

Mamiseishvili, K., & Rosser, V. (2010). International and citizen faculty in the United States: An examination of their productivity at research universities. *Research in Higher Education, 51*(1), 88–107.

Mayrath, M. C. (2008). Attributions of productive authors in educational psychology journals. *Educational Psychology Review, 20*(1), 41–56.

Mullen, C. A. (1999). What I needed to know to get published': Teaching (frightened) graduate students to write for publication. *Journal on Excellence in College Teaching, 10*(2), 27-52.

Oldham, G.R., & Cummings, A. (1996). Employee creativity: Personal and contextual factors at work. *Academy of Management Journal, 39*, 607-634.

Price, J. & Price, J. (2006). Citizenship, gender, and racial differences in the publishing success of graduate student and young academics [Electronic version]. Retrieved from Cornell University, School of Industrial and Labor Relations site: http://digitalcommons.ilr.cornell.edu/workingpapers/145/

Shin, J. C., & Cummings, W. K. (2010). Multi-level analysis of academic publishing across discipline: Research performance, collaboration, and time on research. *Scientometrics, 85*(2), 582-594.

Szymanski, D. M., Ozegovic, J. J., Phillips, J. C., & Briggs-Phillips, M. (2007). Fostering scholarly productivity through academic and internship research training environments. *Training and Education in Professional Psychology, 1*, 135-146.

Taylor, C., & Stern, B. (1997). Asian-Americans: Television advertising and the 'model minority' stereotype. *The Journal of Advertising, 26*(2), 47–61.

Tourangeau, R., Rips, L., & Rasinksi, K. (2000). *The psychology of survey response*. Cambridge: Cambridge University Press

Webber, K. L. (2012). Research productivity of foreign- and US-born faculty: differences by time on task. *Higher Education, 64(5),* 709.

Weidman, C. J., & Stein, E. L. (2003). Socialization of doctoral students to academic norms. *Research in Higher Education, 44*, 641-657.

Weidman, C.J., Twale, D. J., and Stein, E. L. (2001). Socialization of graduate and professional students in higher education: A perilous passage? *ASHE-ERIC Higher Education Report, 28*. Jossey-Bass, San Francisco.

Weiner, B. (1992). *Human motivation, metaphor, theories, and research*. Newbury Park, CA: Sage.

Xie, Y., & Shauman, K. (1998). Sex differences in Research Productivity: New evidence about an old puzzle. *American sociological review, 63*(6), 847-870.