

InFo
Vol. 10, No. 2
October 2007
pp. 19-34

FEATURE

Barriers to Participation in Research for College Faculty

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***Abstract:** Faculty research is of increasing importance in institutions of higher education worldwide, and a growing literature is springing up that explores faculty research output and ways of increasing it. This small study done at an international college in Asia explores and categorizes faculty members' perceptions of barriers to research production, and suggests some things academic administrators can do to improve research production among their faculty members.*

For centuries, higher education faculty have been active in research and publication, as part of the three-part academic role that also includes teaching and providing service to the larger community (see for example Boyer, 1990; 1991; Teodorescu, 2000; Seaberg, 1998). In recent years, the focus on research has increased dramatically (Green & Baskind, 2007). In the areas of service and teaching, a rich literature has sprung up to support teachers in learning the hows and whys of improvement (for service learning, see for example Hart, 2006; Young, et al., 2007; for teaching, see Bain, 2004; Pace & Erikson, 2006; Richlin & Cox, 2004). In the area of research, however, much of the literature focuses on measuring, motivating, and predicting faculty research output, rather than on helping faculty learn how to do better research. While there is a fine line between being condescending and mentoring faculty in areas where they truly need support, it seems there is a need to better support faculty in research, particularly in teaching universities where faculty often have little prior experience in research and publication.

This paper focuses on barriers to research productivity. In many ways these barriers might be similar to what Frederick Herzberg (1959) from the business community labeled as "hygiene factors." These are things which may not cause production, but without them it will not take place.

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Many faculty members come from professional fields where research is a secondary or tertiary goal compared to knowledge or ability in the content area. Many students do not have to write a thesis in order to complete their master's degree, and research is not necessarily integrated into the coursework of the degree program. Faculty from developing countries may have greater needs in these areas, and receive even less support (see for example Kramberg-Walker, 1993). This is the uniqueness of the current study—it focuses on the actual knowledge and experience of international college faculty in the area of research, to understand their needs in order to develop better support for faculty research development at a private international college in Southeast Asia.

Many studies have been conducted to try to understand faculty research production and the barriers to it (Sax, et al., 2002; Fauber & Legg, 2004). Understanding the reasons why faculty do or do not publish is one way of attempting to discover and meet faculty needs for support in research. Fauber and Legg's study of barriers suggests that faculty believe that research negatively affects their teaching, and that they have low levels of support for research, as well as limited time.

In a large (n = over 11,000) international study including 10 countries, Teodorescu (2005) tried to develop a model of research production. He discovered that it varied by nation, and that the predictive power of the instrument also varied from 20 to 40%, being better able to predict in countries with more developed research traditions. In analyzing the reasons behind research production, Teodorescu (2000) concludes that they can be divided into four types: cumulative advantage, psychological-personal characteristics, disciplinary norms, and reinforcement. He concludes that in general, personal characteristics seem to play a much larger role than the other three areas in producing measurable results. Institutional focus on research did not actually enter into the predictive model in most of the countries studied. This is an important insight to which we will return later in this study.

Some of the major results of studies on faculty research production are the following: 1) Faculty perceive research and writing as “add-ons” to their real work of teaching and service (see Green & Baskind, 2007; Seaberg, 1998). 2) Faculty say they allocate insufficient time to research, and wish for more blocks of time to spend on scholarship (Seipel, 2003; Seaberg, 1998). 3) Some studies have found that female faculty tend to publish less than males (Sheehan & Welch, 1996; Sax, et al., 2002), however, Sax, et al. demonstrate that this gap is narrowing rapidly, and Teodorescu (2000) does not confirm that the gap exists. Gender differences may often be explained by other variables such as degree held, experience, rank, grants received, etc. 4) Faculty are publishing more than they used to (Sax, et al., 2002). 5) Between 40% (males) and 50% (females) of faculty have not published anything in the last 2 years (Sax, et al., 2002).

In seeking solutions to the concern for faculty publication, Green and Baskind (2007) note that while there has probably been a rise in overall faculty publications (at least in some fields—see Green & Baskind, 2007), there is still a great need for more effective incentives for faculty research productivity. One study found that Brazil, Mexico, and other countries have included research production either as part of the contract for many higher education professors, or else part of a benefit package (Teodorescu, 2000).

Unfortunately, the area of research ability and success is one where faculty often seem particularly reticent to share with others their success or lack of it. The secrecy surrounding research and publication (whether ability or production), however, cannot continue as before, given today's information society. As one academician put it:

In days of yore, before the Internet, it was not so easy to find out who was productive, who was moribund, and who had a secret identity If a humanities scholar proclaimed that his work was “extraordinarily influential,” there were few reliable citation indexes to prove him wrong. (Mentor, 2007, para. 7)

More and more, academic departments are recommending that publication, grants, teaching innovations, and service activities be recorded and compiled annually (see for example Chu, 2004), rather than being part of the ‘academic freedom’ rules that have in essence led to secrecy and often a lack of development.

Method

The purpose of this study was to understand college faculty members' perceptions of the significant barriers which are detrimental to their participation in research and to identify variations in perceived barriers associated with demographic variables. This study was conducted at an international college, located in South-East Asia (hereafter referred to as *Asian College*), where academic programs are offered both in the local language and in English. As part of the required faculty colloquium at the beginning of the year, a questionnaire was administered to all faculty in attendance (N=73), of which 71 were usable. The questionnaire was available in both English and the local language, and faculty filled it out in the language of their choosing. The researcher-developed *Barriers to Research Production* (19 items, Cronbach's $\alpha = .862$) that is analyzed in this study consists of two subscales: Institutional Barriers (8 items, Cronbach's $\alpha = .736$) and Personal Barriers (11 items, Cronbach's $\alpha = .897$). While the lack of time was agreed upon by all respondents as being a major barrier to research production (see also Fauber & Legg, 2004; Fox, 1992), both the personal barriers and the institutional barrier scales were less reliable when it was included, so it was dropped from the

questionnaire. A similar question about teaching/administrative load seemed to carry the same idea.

The analysis of differences between groups was done using ANOVA. If the model was significant and there were more than two groups, Scheffe's post-hoc test was used to determine whether the differences between the groups were significant.

Results

Demographic Profile of Respondents

Some basic demographics of the Asian College teaching faculty are presented in Table 1. The distribution by gender and degree shows that, though there were slightly more women faculty (53%) at Asian College, the women were less highly educated overall. More of them were teaching with only a bachelor's degree¹, and very few of the women had doctoral degrees. Only at the master's level were there more women than men, but not many more. This is not entirely in line with current international trends which still show more men than women in academia, yet more women than men finishing advanced degrees (Sax, et al., 2002). One possible explanation for this is that Asian College has a large nursing program, and the faculty in that department are almost exclusively female. Almost 50% of the participants in the study indicated they had 10 or fewer years of teaching (across all levels). More than half of the participants had been hired by Asian College in the last 5 years (see Table 2).

Table 1
Distribution of Asian College Faculty by Gender and Degree

Gender	Highest Degree				Total
	No Bachelor's	Bachelor's	Master's	Doctorate	
Female	0	9	26	2	37
Male	1	4	21	7	33
Total	1	13	47	9	70

¹ Those teaching with only a bachelor's degree showed little teaching experience, several were in the pre-college English language institute or Music (many did not indicate their teaching discipline), and several showed Master's work in progress.

Table 2
Years at Asian College

	Frequency	Valid Percent
Less than 5 years	36	53.7
5 to 15 years	22	32.8
More than 15 years	9	13.4
Total	67	100.0

Perceived Barriers

Data showed that there were significant differences between the different levels of education ($F = 6.904, p = .002$). The post-hoc tests show that doctoral degree holders perceived significantly fewer barriers to research than did faculty members holding a Master's or Bachelor's degree (see Table 3), however, these two groups were not significantly different from each other. On a 5-point scale, with 5 being "strongly agree," Bachelor's degree holders had an average barriers rating of 3.5, or between "Agree" and "Neutral." Doctoral degree holders were clearly between "Neutral" and "Disagree" with an average barriers rating of 2.6. This is not surprising, and fits with earlier research, which further showed that PhD holders were also more prolific in publications than faculty without doctoral degrees (Baughman & Goldman, 1999).

Table 3
Comparison of Average Perceived Barriers by Highest Degree

Comparison by Degree	Mean Difference	p
Bachelor's vs. Master's	.336	.128
Bachelor's vs. Doctoral	.839	.002
Master's vs. Doctoral	.503	.035

The actual barriers perceived by faculty with differing levels of education were also different. The top three perceived barriers for each level of education are listed in Table 4. These results show a lack of confidence about the research process for the bachelor's degree holders, but with some interesting shifts over time. Lack of experience and lack of confidence were significantly different ($p < .01$) between BA degree holders ($M = 4.1, 3.9$) and doctoral degree holders ($M = 2.3, 2.2$). As more advanced degrees are obtained, confidence appears to rise, and the needs shift to other areas. It is likely, for example, that doctoral graduates do not know less about where to get funding, or about finding library

resources, but rather, that their other needs are sufficiently cared for that these concerns now rise to the top of the list. It is important to note the shift from more personal barriers to more institutional barriers with higher levels of education (see also the discussion of personal barriers and Table 10 below).

Table 4
Highest Perceived Barriers to Research Production
by Educational Level

Barrier Rank	BA graduates		MA graduates		PhD graduates	
	Barriers	Mean	Barriers	Mean	Barriers	Mean
greatest	(P) Lack of experience	4.1	(I) Heavy teaching/admin. load	4.3	(I) Lack of financial resources	4.2
2 nd greatest	(I) Heavy teaching/admin load (P) inadequate knowledge of statistics	3.9	(I) Lack of research mentors	4.1	(I) Heavy teaching/admin. load	4.0
3 rd greatest	(P) Lack of confidence	3.9	(I) Unavailability of technical assistance	3.5	(I) Lack of Library Resources	3.9

5 = Strongly Agree this is a barrier 1 = Strongly Disagree

(I) = Institutional Barriers (P) = Personal Barriers

Women and men differed significantly in their perceptions of their greatest barriers to research production (see Table 5). While both agreed that teaching and work responsibilities were the greatest hindrance to their research, women's other barriers were significantly different from men's, and tended to focus on their own lack of knowledge of statistics ($p < .01$) and their need for mentoring ($p < .05$), possibly showing a lack of confidence and/or a need to collaborate. Men's barriers were more instrumental, and related to practical aspects of research implementation; they did not appear to indicate a lack of confidence or need for collaboration. This is typical of other research on differences between men and women, and may or may not indicate actual differences in ability (see Tannen, 2001).

Table 5
Highest Perceived Barriers by Gender

Barrier Rank	Women		Men	
	Barriers	Mean	Barriers	Mean
greatest	(I) Heavy teaching/admin. Load	4.1	(I) Heavy teaching/admin. load	4.3
2 nd greatest	(P) inadequate knowledge of statistics	3.8	(I) Lack of financial resources	3.7
3 rd greatest	(I) Lack of research mentors	3.7	(I) Unavailability of technical assistance	3.5

Personal barrier scores for both English-speaking and local faculty were not statistically significantly different from the institutional barrier scores. This differs from past research by Fauber and Legg (2004) which showed that personal barriers were more significantly related to research production than institutional factors. It is important to note that teachers consistently stated that their time constraints were a real barrier to research production. Prior research is divided on this issue. While the personal and institutional scales were not statistically significantly different, however, there were significant differences between the two groups when divided by language. When barriers were examined based on the language of the professor, there were multiple statistically significant differences (see Table 6) on both perceptions of institutional and personal barriers, and on an overall measure. The local professors experienced much stronger barriers of all types.

Table 6
Means of Perceived Barriers by Language Groups

	Local Language Professors	English-Speaking Professors	p
Institutional Barriers	3.7	3.0	< .001
Personal Barriers	3.4	2.9	.006
Overall Barriers	3.5	3.0	< .001

Table 7 shows the top three barriers as perceived by the teachers of Asian College when divided by language group. Note that the entire list for both groups is made up of institutional, not personal, barriers. Both groups feel that their greatest barrier to doing research is teaching (cf. Fauber & Legg, 2004). Beyond that common base, the lists differ quite a bit (for a complete listing of

the significant differences between groups by language, see Table 8). Note that the mean scores for non-English-speaking faculty were mainly in the 4 range, which means these items are considered barriers, while for the English-speaking faculty, the average was generally 3 or below, which means they are considered neutral, or not really barriers. The local teachers perceived more of a barrier caused by lack of institutional and departmental support and fewer library resources were available to them. This concern for library resources was significantly different ($p < .01$) between local language speakers ($M = 3.9$) and English-speaking faculty ($M = 3.1$). Not surprisingly, they also felt that language, referencing, and writing skills were much greater barriers to them than what the English speakers felt. Given the heavy proportion of research publication in English, language could also account for some the differences in perceptions of library holdings. Note that some of these differences, such as the lack of research mentors may well be influenced by the fact that the local language group was 75% female and the English group was more masculine (57%) (cf. Table 5), and females were more concerned about mentoring.

Table 7
Highest Overall Barriers by Language Groups

Barrier Rank	Local Language		English	
	Barriers	Means	Barriers	Means
greatest	(I) Heavy teaching/admin. Load	4.3	(I) Heavy teaching/admin. load	4.1
2 nd greatest	(I) Lack of research mentors	4.0	(I) Lack of financial resources	3.5
3 rd greatest	(I) Lack of financial resources	3.9	(I) Lack of technical assistance	3.4
	(I) Lack of library resources	3.9		

1=Strongly Disagree this is a barrier 5= Strongly Agree

Institutional barrier scores analyzed separately were equally interesting. Faculty members listed the following as the three most important barriers that kept them from publishing: 1) lack of technical assistance, 2) lack of research mentoring, and 3) lack of financial support. This list parallels Fauber and Legg's (2004) findings on felt needs of radiology professors, which includes funds, personnel to assist, software/computers, and training in research skills.

Table 8
Statistically Significant Differences in Barriers by Language Group

	Barrier felt more strongly by this group	Local Language Faculty Mean	English- Speaking Faculty Mean	p
Lack of institutional support	Local	3.42	2.75	.037
Lack of departmental support	Local	3.50	2.72	.009
Lack of personal interest	Local	3.25	2.57	.012
Lack of library resources	Local	3.92	3.11	.003
Unfamiliarity with writing techniques	Local	3.57	2.62	.001
Unfamiliarity with referencing techniques	Local	3.17	2.57	.040
Language skills limit my confidence	Local	3.83	2.60	< .001
Lack of equipment or facilities	Local	3.33	2.64	.024
Lack of research mentors	Local	4.00	3.13	.001

Interestingly, faculty members with less education perceived that lack of institutional support ($p = .042$ BA to PhD) and lack of departmental support ($p = .004$ BA to PhD; $p = .012$ MA to PhD) were significantly greater barriers to research compared to the Doctoral degree holders. This finding replicates the result by Fauber and Legg (2004), who found that researchers with graduate degrees found their environment more supportive of research, and felt fewer needs for supplies, equipment, and assistants.

Institutional barrier scores did not vary significantly by level of education or gender. They did, however, vary based on what language one studied in at the Master's level. Those who studied their Master's degree in English perceive the institutional barriers to be significantly lower than those who studied only in the local language (mean difference of 0.50, $p = .04$). Perhaps those who studied in English find the research culture at Asian College more similar to what they experienced in the past, or perhaps their language skills give them more comfort or their degree prepared them better to be a researcher. This is not clear, and should be investigated further.

When personal barriers were examined in detail, interesting patterns were found. The differences in personal barriers when results were grouped by highest degree yield a significant model ($F = 8.638, p < .001$). There were many significant differences, as one might expect, in areas such as personal ability, confidence, and experience. Table 9 shows that the overall scores were significantly different for doctoral degree holders, but bachelor's and master's graduates were not significantly different from each other in overall personal barriers. The average personal barrier score was approximately 3.5 for BA graduates, 3.0 for MA holders, and 2.2 for Doctoral degree holders, which shows that the perceptions of personal barriers are real for bachelor's degree holders, and the doctoral degree holders have few personal barriers. Fauber and Legg's (2004) study also parallels the present study, finding that radiology teachers with associate's, bachelor's and master's degrees were significantly different from each other in their skill levels in the area of research.

Table 9
Average Personal Barriers by Highest Degree

Comparison by Degree	Mean Difference	p
Bachelor's vs. Master's	.53	.088
Bachelor's vs. Doctorate	1.34	< .001
Master's vs. Doctorate	.82	.014

Table 10 shows the breakdown of personal barriers to research as perceived by faculty members with different academic degrees. The one personal barrier that all groups agreed on was a need to know more about statistics. It is interesting to note how much lower the personal barrier means are for those with doctoral degrees. In fact, other than knowledge of statistics, the faculty with doctoral degrees rated the personal barriers as just over 2.0, which means they disagree that these are barriers. In other words, the faculty with doctoral degrees are suggesting that they have no excuse for not doing research unless it relates to time or motivation. The bachelor's degree holders' most significant barriers are around a 4.0, which means they agree that this item is a barrier for them. Table 11 gives the detail of which personal barriers were significantly different for which groups.

Table 10
 Greatest Personal Barriers to Research Production by Highest Degree

Barrier Rank	BA graduates		MA graduates		PhD graduates	
	Barriers	Mean	Barriers	Mean	Barriers	Mean
greatest	Lack of experience	4.1	Lack of experience	3.4	Inadequate knowledge of statistics	3.1
2 nd greatest	Inadequate knowledge of statistics	4.0	Inadequate knowledge of statistics	3.3	Lack of experience*	2.3
3 rd greatest	Lack of confidence	3.9	Inadequate knowledge of research design	3.3	Unfamiliarity with research outlets*	2.3

* tied for second place

Table 11
 Significant Differences in Mean Personal Barriers by Highest Degree

Personal Barriers	Significant between Groups A and B	
	Group A (mean)	Group B (mean)
Lack of personal interest	BA (3.4)*	Doctoral (2.1)
Lack of experience	BA (4.1)** MA (3.4)*	Doctoral (2.3)
Unfamiliarity with referencing techniques	BA (3.4)**	Doctoral (1.8)
Unfamiliarity with research design	BA (3.5)** MA (3.3)**	Doctoral (2.0)
Lack of ability to write in desired publication terminology and/or style	BA (3.7) ** MA (3.1)*	Doctoral (2.1)
Lack of confidence in my ability to produce quality research	BA (3.9)**	Doctoral (2.2)
Unfamiliarity with outlets for publication	BA (3.8)**	Doctoral (2.3)

* p < .05

**p < .01

Discussion

It is evident that many perceived barriers to research exist at Asian College. The barriers are not surprising, and the findings generally support past studies on faculty research. What does become clear from this study is that in settings where the research tradition may not be as strong, and where publishing opportunities and resources in the native language are limited, the barriers may be significantly different for local faculty than for English speakers.

The data clearly show that doctorally qualified faculty perceive far lower barriers to research than even those with master's degrees. If an institution is truly concerned about research productivity, they would do well to take this into account during recruiting. The data clearly show perceived needs which could be met by institutional support. What follows are some suggestions, both from the literature and from the data, as to what individuals and institutions can do to break down barriers to research production.

For faculty members, some possible ways to increase research productivity suggested in the literature are:

- 1) **Seek excellence within your discipline.** As scholars connect themselves more to the research and literature within their discipline, they make a name for their institution and themselves in the process (see Teodorescu, 2000).
- 2) **Just do it.** Studies show (see Teodorescu, 2000) that those who publish articles early in their career continue to publish, while those who do not make it a habit to publish do not increase their production with age or rank.
- 3) **Go to international conferences.** In his predictive model, Teodorescu (2000) found that for developing nations, attendance at international research conferences was the single highest predictor of research production. The professional networking which takes place at conferences is seen as particularly beneficial to young researchers.
- 4) **Publish with a friend.** More than three-fourths of all journal publications are by multiple authors (Green & Baskind, 2007; Seaberg, 1998). This article, for example, never would have been written by either one of the authors alone.
- 5) **Publish with your students.** Most graduate students publish at first with their professors (Reis, 2000). Faculty expertise plus the student's interest and effort can make for good collaboration. It is important to establish clarity about authorship early in the process, but this combination can be beneficial to both parties.

- 6) **Seek financial incentives.** In developed countries, grants received constituted the highest correlate of research production (Teodorescu, 2000). This was not true in developing countries, probably because of the limited availability of funding.
- 7) **Aim for peer-reviewed publications.** These carry the greatest weight for promotion and tenure, as they are validated by colleagues in the field (Seipel, 2003).

Breaking Down Institutional Barriers

In the end, research publishing appears to be a chicken/egg sort of situation. It is unclear from these studies whether these activities cause research, or whether publication of research causes these activities. We do know that there is a correlation, however, which is a good place to begin. Here are things that, while not proven to *cause* research production, are at least correlated with research production, and might make a difference.

There are things that institutions can do, both to break down barriers at the institutional level, and to support faculty as they work with their personal barriers to research. The following are ideas worth considering:

- 1) **Start a Research Center.** This should be a user-friendly sort of place where faculty feel comfortable dropping by to discuss their research ideas, get help with design, statistics, etc. Observation during this study showed that confidence building was an important role of such consulting. This center should support helping faculty find outlets for publishing research, finding financing as needed, and other technical design/production issues.
- 2) **Set institutional priorities for research.** An institutional list of topics which are priorities for research may be a good idea. This list can be collaboratively developed, which is a process that itself can stimulate research. Institutional research priorities include areas of institutional concern or expertise that can serve as a seedbed for individual projects. These institutional priorities can also help to organize individual studies so that they become part of larger research initiatives.
- 3) **Set aside some funding for research.** This does not have to include large amounts of money, but small grants for travel, photocopies, books, etc., could be made available competitively to projects which are deemed to be most viable and of greatest institutional interest. If more funding is available, course load reductions could be granted for worthy projects. Institutions can also help to point their faculty to sources of funding, and assist in the preparation of funding requests.

- 4) **Support faculty with appropriate tools.** Be sure that there are institutional licenses to statistical software (as well as technical assistance in using it), journal subscriptions, funding available for faculty to purchase books of interest to their research that can later become part of the library, etc.
- 5) **Improve the schedule.** It takes some effort, but it must be a priority to ensure that faculty schedules (including classes and other institutionally scheduled activities) have free blocks of time where faculty can work on research without interruption.
- 6) **Provide training in research skills.** Providing short training courses, from one hour to a few days over break, can make a significant difference. These courses could cover statistics (both concepts and software usage), writing, research design, or a variety of other skills which are used in research. At times it may be possible to do something campus-wide, but often it may be better to focus on a subset that has similar perceived needs.
- 7) **Develop a mentoring plan.** This study shows that many faculty are concerned about mentoring. Mentoring can happen through a research center, but in addition, linking inexperienced faculty with more experienced ones is important. Often experienced researchers (senior faculty) are very busy and would welcome a co-author. The mentoring could also take place over a drink or a meal. What is important is that researchers do not feel alone, and that they feel they have someone with whom they can consult.

Institutions that value research productivity need to find ways of lowering the barriers to research production. Much can be done with very limited financial investment on the part of the institution. Success is certainly also dependent on the faculty member demonstrating interest and being willing to dedicate time and energy to research. There is no recipe for success, but our research demonstrates that it is not difficult to identify the barriers. The question is really whether the institution and the faculty members are prepared to do what is within their power to reduce those barriers and to make research a priority.

References

- Baughman, J. C., & Goldman, R. N. (1999). College rankings and faculty publications. *Change*, 31(2), 44-53. Retrieved from Academic Search Premier database.
- Boyer, E. L. (1990). *Scholarship reconsidered: Priorities of the professoriate*. Princeton, NJ: Carnegie Foundation for the Advancement of Teaching.
- Boyer, E. L. (1991). The scholarship of teaching from scholarship reconsidered: Priorities of the professoriate. *College Teaching*, 39(1), 11-13.
- Chu, D. (2004). Best practices. *Academic Leader*, 20(1), 7.
- Fauber, T. L., & Legg, J. S. (2004). Perceived research needs and barriers among R.T. educators. *Radiologic Technology*, September 1, 2004.
- Fox, M. F. (1992). Research, teaching and publication productivity: Mutuality versus competition in academia. *Sociology of Education*, 65(4), 293-395.
- Green, R. G., & Baskind, F. R. (2007). The second decade of the faculty publication project: Journal article publications and the importance of faculty scholarship *Journal of Social Work Education*, 43(2), 281-295. Retrieved from Academic Search Premier database.
- Hart, S. (2006). Breaking literacy boundaries through critical service-learning: Education for the silenced and marginalized. *Mentoring & Tutoring*, 14(1), 17-32. DOI: 10.1080/13611260500432236
- Herzberg, F. (1959). *The motivation to work*. New York: Wiley.
- Kramberg-Walker, C. (1993). The need to provide writing support for academic engineers. *Professional Communication, IEEE Transactions on* 36(3), 130 – 136. doi:10.1109/47.238053
- Mentor. (2007). Is it research or stalking? *Chronicle of Higher Education* 53(20), C3. Retrieved from Academic Search Premier database.
- Pace, D., & Erikson, K. A. (2006). The scholarship of teaching and learning history comes of age: A new international organization and web site/newsletter. *The History Teacher*, 40(1), 75-78.
- Reis, R. (2000, November 24). Getting published as a graduate student in the sciences. *The Chronicle of Higher Education: Chronicle Careers*. Retrieved from <http://chronicle.com/jobs/2000/11/2000112402c.htm>
- Richlin, L., & Cox, M. D. (2004). Developing scholarly teaching and the scholarship of teaching and learning through faculty learning communities. *New Directions for Teaching and Learning*, 97, 127-135.

- Sax, L. J., Hagedorn, L. S., Arredondo, M., & Dicrisi III, F. A. (2002). Faculty research productivity: Exploring the role of gender and family-related factors. *Research in Higher Education, 43*(4), 423-446.
- Seaberg, J. R. (1998). Faculty reports of workload: Results of a national study. *Journal of Social Work Education, 31*(1), 7-19. Retrieved from Academic Search Premier database.
- Seipel, M. O. (2003). Assessing publication for tenure. *Journal of Social Work Education, 39*(1), 79-88. Retrieved from Academic Search Premier database.
- Sheehan, B. S. & Welch, A.R. (1996). The Australian academic profession. In P. G. Altbach (ed.), *The international academic profession: Portraits of fourteen countries* (pp. 51-96). San Francisco, CA: Jossey-Bass.
- Tannen, D. (2001). *You just don't understand: Women and men in conversation*. New York: Harper Collins.
- Teodorescu, D. (2000). Correlates of faculty publication productivity: A cross-national analysis. *Higher Education, 39*, 201-222. Retrieved from Academic Search Premier database.
- Young, C., Shinnar, R., Ackerman, R., Carruthers, C., & Young, D. (2007). Implementing and sustaining service learning at the institutional level. *Journal of Experiential Education, 29*(3), 344-365.

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