

To Whom Are We Listening? Measuring the Pulse of Geography Education Research, 2010

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Abstract

This study analyzes citations from thirty-six articles published in volume 34 (2010) of the *Journal of Geography in Higher Education (JGHE)*. This is one of the dominant publications in the suite of international journals focusing on geography education. Our purpose is to explore the question, to whom are “we” – the geography education community – listening? Citations from these articles were categorized as originating from the journal subject categories geography education, geography, or non-geography. Simple count and percent summaries of citations from individual journals within subject categories, and overall across categories were extracted from the thirty-six articles. The quality of these citations were assessed using each journal’s SCImago Journal Ranking (SJR) score and quartile standing for 2010. Weighted citation values were calculated to rank the leading contributing journals to the *JGHE*. The results indicated that the *JGHE* is underpinned by a diversity of high-impact journals from all three categories including the *Journal of Geography in Higher Education* (self-cites), *Science Education*, *Progress in Human Geography*, and *The Professional Geographer*. Our data revealed that this volume of *JGHE* cited articles from a diverse range of journals with 47.5% from geography (30.3% geography education and 17.2 percent geography) and 52.5% from non-geography journals. Education journals comprised 62.5% of the citations from the non-geography category. These statistics suggest the scholars in geography education are reaching within and across the discipline to enhance and propel their research activities.

Keywords: citations, bibliometric, geography education, journals

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Introduction

This study explores the question, to whom are “we” listening? Do we just hear the soundings of academicians from geography education, while ignoring rumblings from other specialists inside and outside geography? In other words, as Johnston (2003, p. 135) questioned: “[I]s the circulation of knowledge through academic journals largely confined within separate disciplinary containers?” It is important to incorporate knowledge and ideas from both within and across disciplines to generate scholarship that is innovative, rigorous, and propels us forward; otherwise, we are in loopback configuration to use an analogy from telecommunications (i.e., talking to ourselves) with the same information coming and going. To measure this synergy within and across disciplines, citations from a dominant journal in geography education – *Journal of Geography in Higher Education* (JGHE) – will be analyzed for the extent that its citations were drawn from journals from geography education, geography (excluding geography education), or non-geography (Howey, Savage, Verbeeten & Van Hoof, 1999). These sourcing (cited) journals will be evaluated using SCImago (2007-2016), a journal-ranking database, to assess the significance of the JGHE’s scholarly interaction inside and outside geography.

Background

Before using citations to assess academic standings researchers should be aware of potential concerns. Authors, fields, disciplines, and individual journals and networks of journals have been ranked using citation counts and derivative measures. One important issue is a bias toward English because the power centers of academia and publishing are in the United States and United Kingdom. Scholars from other countries favoring English also have an advantage accessing Routledge, Elsevier, Sage and other major publishing outlets because language doesn’t pose a barrier. Notwithstanding these biases, citation analysis has a long and increasing application across numerous academic fronts. Foster, Muellerleile, Olds and Peck (2007) stated that citation exchanges are useful in following the theoretical and applied discourses existing or emerging within disciplines. For geographers the main measure of scholarly success is the peer-reviewed article, preferably those published in prestigious journals with high impact. The analysis of citations provides the ability to visualize the connections between scholars, departments, journals, universities, and other institutions. For example, citations have been used to visualize the time and space dynamics of a single author – Torsten Hagestrand (Persson & Ellegård, 2012) and even designate “classic” status to specific articles (Wrigley & Matthews, 1986). Other studies examined citations to measure patterns and influentialness of a subdiscipline such as economic geography (Bodman, 2010; Foster *et al.*, 2007),

quantify the exchange between tourism and hospitality research communities (Howey *et al.*, 1999), and compare citation patterns of human versus physical geographers (Johnston, 2003). Citation indices were used to compare geography programs in the United States (Turner & Meyer, 1985) and United States and Canada (Coomes *et al.*, 2013). There have been a number of studies where citation counts and indices have been used to evaluate the dissemination of knowledge within and across disciplines (Solomon, Carley & Porter, 2016), between subject categories and networks of journals (Gatrell & Smith, 1984; Liu & Wang, 2005; Zawacki-Richter & Anderson, 2011), and for specialties or research communities (Barranco, Jennings, May & Wells, 2016; Liu, 2007).

Relying just on citation counts can be misleading so a qualitative assessment is advisable. It is important to recognize some potential confounding issues of using citations without discrimination. The “tongue in cheek” Cynical Geographers Collective (2011, p. 190) suggests that a focus on citation counts “stifles risk taking” with authors presumably pursuing more popular topics over other important studies with less visibility and potential to interest readers, journal editors, and publishers. Further, count inflation occurs with tendencies of authors citing to recognize historic works, “big names,” dissertation advisors, or others with minimal or no contribution to a publication. This latter tactic is unethical, and a potential problem sometimes when attempting to evaluate portfolios for tenure, promotion, and merit. For another example, Barranco *et al.* (2016) state that articles are sometimes cited for the wrong reason; rather than being cited for being groundbreaking, some articles are cited because of “bad” writing or science. Here scholars are rightfully pointing out poor scholarship to warn others of potential issues with a study’s techniques, methods, or findings. It would be ironic if an author of spurious articles gained tenure with numerous citations from others attempting to correct her erroneous studies. Self-cites can ratchet up counts, but again there are occasions when it is appropriate for an author to reference seminal pieces from his catalog. So attempts to exclude self-cites should proceed with caution, notwithstanding that not all self-cites are “self-serving” but recognize legitimate and pertinent contributions (Barranco *et al.*, 2016). One other factor influencing citation counts is whether a journal is available online or just offline. Lawrence (2001) observed that computer science journals with online or open access have more citations than those offering access just offline (7.03 to 2.74). This is less a concern in our current era as most journals have some sort of online presence on the World Wide Web.

With so many negatives, citations alone are insufficient to designate the “best” author, article, or journal of the year (Foster *et al.*, 2007). It is imperative to use citation counts with extreme caution for more serious endeavors such as making decisions on tenure, promotion, and merit (Cynical Geographers Collective, 2011). With this in mind, Weingart (2005) advocates for an “informed peer review” that incorporates other information besides just quantitative. So digging deeper into the numbers is important when using citations to evaluate

departments, scholars, and journals. While recognizing potential problems with citation analysis, our objective herein is to measure the *JGHE*'s connections within and across disciplines. Our period of 2010 postdates Bednarz's (2000) proposed research agenda that calls for more studies on spatial learning and thinking and integration of pedagogic theories from the field of education. This ten-year interim offers an opportunity to comment on whether a paradigm shift began to manifest itself within geography education.

Methods

Articles appearing in the *Journal of Geography in Higher Education* during 2010 (vol. 34) were compiled from electronic sources. We created a list by first copying each article's title, "category," author(s), and page numbers from the issue-level tables of contents on the journal's webpage (*Journal of Geography in Higher Education*, 2016). Next, we used Education Source (database) from EBSCO to obtain direct URLs to the full text of each article; we cross-referenced the database content against the publisher's (Taylor & Francis) table of contents rather than working from the database initially to be certain that the database did in fact include every published article. We then compiled a list of all the works cited in the *JGHE* articles. Ulrichsweb Global Serials Directory (2016) was used to confirm the subject category(ies) of journals. It contains entries for academic/scholarly journals as well as for magazines, newsletters, and other miscellaneous formats. Ulrichsweb maintains details such as publisher, website, country of publication, language(s) of content, whether a journal is still known to be actively published or is known to be ceased (no longer published), and other details which could provide answers to specific questions.

The *Journal of Geography of Higher Education* (*JGHE*) is an important publication among a suite of international geography education journals that include *Focus on Geography*, *Geographical Education*, *Geography*, *International Research in Geographical and Environmental Education*, *Journal of Geography*, *Primary Geography*, *Research in Geographic Education*, *Teaching Geography*, and *The Geography Teacher* (Albert, Gerrish & Adu-Prah, 2017). While these journals were all operating in 2010, recent comers such as *Review of International Geographic Education Online* (2011), *Journal of Research and Didactics in Geography* (2012), and the *European Journal of Geography* (2014) postdate our analysis so future studies would expect citations from these journals.

From 2009 to 2011, the *JGHE* operated as "breeder," sending almost twice citations than its principle recipient the *Journal of Geography* (Albert, Gerrish & Adu-Prah, 2017). Given its dominant position within the network of geography education journals, the *JGHE* was selected for further analysis. The *JGHE* published 36 citable documents, 35 research articles and one annual lecture, during volume 34, (2010). This volume included four issues totaling around 600 pages; one editorial was excluded (Appendix A). The references within these articles were scanned for journal citations; other sources such as

books, reports, newsletters, and other miscellaneous publications were excluded. The peer-reviewed journal is the gold standard for disseminating information within academia, and especially among geographers, so our focus here is just citations received from journals. The quality of these citations will be evaluated using SCImago's journal ranking browser, which was developed by SCImago Lab and is powered by Scopus. Both a journal's SJR score and its quartile ranking within its subject category (i.e., Geography, Planning, and Development) were available for all but one of the referenced journals. According to SCImago (2007-2016), "SJR is a size-independent prestige indicator that ranks journals by their 'average prestige per article'. It is based on the idea that 'all citations are not created equal'. SJR is a measure of scientific influence of journals that accounts for both the number of citations received by a journal and the importance or prestige of the journals where such citations come from." A more detailed description of the SCImago Journal Ranking indicator, including its formula and iterations, is available at <http://www.SCImagojr.com/SCImagoJournalRank.pdf>.

Results

There were an average of 19.5 journal citations per article in the *JGHE* (volume 34) with averages of 5.9, 3.3., and 10.2 citations per article, respectively from geography education, geography, and non-geography journals. Of the 702 articles cited, 213 or 30.3% were from geography education journals. The number of citations from geography journals accounted for 121 or 17.2%; however, the combined geography education and geography categories contributed just under half (47.5%) of all citations. This of course means that more than half of the (52.5%) citations were from journals outside geography (Table 1). Howey *et al.* (1999) in a similar investigation using hospitality and tourism journals found that 80% of their citations were outside of these two research communities. These authors interpreted this statistic as "meaning neither the hospitality nor the tourism disciplines are self-sufficient" in generating a baseline knowledge sphere (Howey *et al.*, 1999, p. 137). Some might disagree with that statement in view of our current era where cross-, multi-, or inter-disciplinarian research is a prerequisite, or at least encouraged and promoted within US funding agencies such as the National Science Foundation and the National Institute of Health. However, still it is difficult to establish the optimal collaboration amongst scholars from different disciplines. The optimal cross-disciplinarian exchange could change over time, assume greater or lesser value per specific disciplines, or both (Barranco *et al.*, 2016). While tourism and hospitality journals gathered 80% of its citation outside its discipline (Howey *et al.*, 1999), the *JGHE* received 52% in comparison. If, however, one sums the citations coming from outside geography education proper, that is, from geography and non-geography journals, the outside exchange rises to 70%. We will analyze the origin of these citations from non-geography sources later in this section to assess whether education journals are infusing knowledge into geography education.

Table 1
Citing across subject categories, descriptive statistics, JGHE, 2010.

	Geography Education	Geography	Non- geography	Total
Citations				
Number	213	121	368	702
(Percent)	(30.3)	(17.2)	(52.4)	(100)
Average	5.9	3.3	10.2	19.5
Average (Excluding Outlier)	5.3	N/A	9.0	N/A

Examining citation origin within the geography education category discloses that communication among *JGHE* authors is almost exclusively “self cites” with 192 (90.1%) from other *JGHE* articles (Table 2). Even though the *Journal of Geography (JoG)* and *International Research on Geographical and Environmental Education (IRGEE)* were in the same SJR quartile (Q2) as the (*JGHE*), its robust self-citation percentage demonstrates a circular communication. That only three other geography education journals registered citations with *JGHE* for just 21 or 9.9% of the citations further supports the assertion that the *JGHE* is a dominating force within geography education.

The *JGHE* cites geography journals less than it does itself and other geography education journals. With just over half the citations (121 vs. 213) as from geography education, contributions from geography journals are much less; however, the overall quality of these citations is high according to their SJR score and quartile standing (Table 3). With three of four journals with quartile 1 designation, the geography journals cited were of higher standing than those from geography education where most reached only quartile 2 designation (Table 2).

The remaining 368 citations were received from 202 non-geography journals; the top ten highest cited accounted for 105 or 28.5% of the citations (Table 4). Those journal titles that included such words as *academic, assessment, cognitive, college, curriculum, education(al), e-learning, learning, pedagogy, teacher, teaching, and instruction(al)* were counted as education journals; others were cross-referenced with Ulrichsweb Global Serials Directory. These education journals contributed 232 (62.5%) of the citations from the non-geography category; the remaining 192 journals accounted on average for 1.4 citations each, as compared to an average 10.2 citations from the top ten journals in this category. The top ten cited were all from education journals (Table 5) and, with two exceptions, all had quartile 1 designation during 2010; the two highest were *Higher Education* and *Science Education* with 14 and 13 citations, respectively.

Table 2

JGHE citing articles from geography education journals, number, percentage, SJR, and quartile ranking, 2010.

Geography Education Journals	Citations (Number)	Percent Category (N=213)	Percent Overall (N=702)	SJR	Quartile
<i>JGHE</i>	192	90.1	27.4	0.363	2
<i>JoG</i>	14	6.6	2.0	0.255	2
<i>IRGEE</i>	6	2.8	0.9	0.283	2
<i>Teaching Geography</i>	1	0.5	0.1	0.168	3
Total	213	100	30.3	-	-

Table 3
JGHE citing articles from geography journals, number, percentage, SJR, and quartile ranking, 2010.

Geography Journals	Citations (Number)	Percent Category (N=121)	Percent Overall (N=702)	SJR	Quartile
<i>The Professional Geographer</i>	25	20.7	3.6	1.32	1
<i>Geographical Review</i>	13	10.7	1.9	0.402	2
<i>Progress in Human Geography</i>	13	10.7	1.9	2.77	1
<i>Area</i>	12	9.9	1.7	1.165	1
Others (30)	58	47.9	8.3	-	-
Total	121	100	17.2	-	-

Table 4
JGHE (2010) citing non-geography journals, number and percentage.

Non-geography Journals	Number	Percent Category (N=368)	Percent Overall (N=702)
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<i>Teaching, Learning, and Education</i>	232	62.5	33.0
Others Journals	136	37.5	19.4
Total	368	100	52.4

Table 5
Top “ten” journals from the non-geography citations, 2010 citation statistics.

Journal Titles	Citations	Percent Category	Percent Overall	SJR	Quartile
<i>Higher Education</i>	14	3.8	2.0	0.967	1
<i>Science Education</i>	13	3.5	1.9	3.307	1
<i>Studies in Higher Education</i>	11	3.0	1.6	1.356	1
<i>British Journal of Educational Technology</i>	10	2.7	1.4	1.211	1
<i>International Journal of Science Education</i>	10	2.7	1.4	1.465	1
<i>New Directions for Teaching and Learning</i>	10	2.7	1.4	0.186	3
<i>Assessment & Evaluation in Higher Education</i>	9	2.4	1.3	0.801	1
<i>Table 5 (continued)</i>					
<i>Journal of Planning Education and Research</i>	9	2.4	1.3	0.768	1

<i>Council on Undergraduate Research</i>	7	1.9	1.0	n/a	n/a
<i>Research in Higher Education</i>	6	1.6	0.9	2.298	1
<i>Teaching in Higher Education</i>	6	1.6	0.9	0.741	1
Total	105	28.5	15.0	-	-

The eighteen journals (minus one) listed in Tables 2, 3, and 5 were evaluated using a weighted scale rather than simple counts. Therefore, each journal's percent overall citations times its SRJ created a weighted citation (Table 6). The *JGHE's* weighted citation score accounted for 23% of the overall contribution. Further, *Science Education* (15%), from the non-geography category, placed second overall, followed closely by *Progress in Human Geography* (12%) and *The Professional Geographer* (11%) from the geography category; the remaining titles in the list added 5% or less each. Measuring quantity, these four journals contributed 34.8 percent of the overall number of citations from the *JGHE* during 2010. However, weighting these citations (overall percent * SJR) introduced a quality dimension, and in doing so, these four journals' supremacy rose to 61% of the weighted citations (Table 6). Using percent weighted citations from Table 6 and summing these by journal categories found 25% of the weighted citations scores were from geography education journals, 27% from geography journals, and 48% from non-geography journals (Figure 1). Again, this supports the claim that the *JGHE* canvassed a wide distribution of journal sources outside of geography education and geography.

Table 6
Overall influence of journals contributing to JGHE, 2010.

Journal	% Overall Citations (N=702)	SJR	Weighted Citations (%)
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<i>Journal of Geography in Higher Education</i>	27.4	0.363	9.9462 (23)
<i>Science Education</i>	1.9	3.307	6.283 (15)
<i>Progress in Human Geography</i>	1.9	2.77	5.263 (12)
<i>The Professional Geographer</i>	3.6	1.32	4.752 (11)
<i>Studies in Higher Education</i>	1.6	1.356	2.1696 (5)
<i>Research in Higher Education</i>	0.9	2.298	2.0682 (5)
<i>International Journal of Science Education</i>	1.4	1.465	2.051 (5)
<i>Area</i>	1.7	1.165	1.9805 (5)
<i>Higher Education</i>	2	0.967	1.934 (5)
<i>British Journal of Educational Technology</i>	1.4	1.211	1.6954 (4)
<i>Assessment & Evaluation in Higher Education</i>	1.3	0.801	1.0413 (2)
<i>Journal of Planning Education and Research</i>	1.3	0.768	0.9984 (2)
<i>Geographical Review</i>	1.9	0.402	0.7638 (2)
<i>Teaching in Higher Education</i>	0.9	0.741	0.6669 (2)
<i>Journal of Geography</i>	2	0.255	0.51 (1)
<i>Table 6 (continued)</i>			
<i>New Directions for Teaching and Learning</i>	1.4	0.186	0.2604 (1)
<i>International Research in Geographical and Environmental Research</i>	0.9	0.283	0.2547 (1)

<i>Teaching Geography</i>	0.1	0.168	0.0168 (<1)
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Notes: Column 1 includes those journals listed in Tables, 3, 4, and 6, except for the *Council on Undergraduate Research*, which is not listed in SCImago; column 2 is the overall percentage of citations per journal out of total (N=702); column 3 is each journal’s 2010 SJR score from SCImago; and column 4 is the weighted citations (column 2*3) given as a score and percentage.

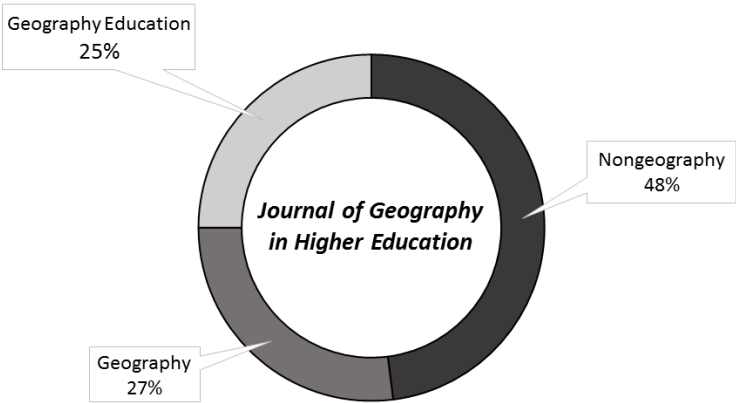


Figure 1: Percent of weighted citations by journal category contributing to the *Journal of Geography in Higher Education*, 2010.

Discussion

What is the appropriate balance within and across disciplinary exchange? And beyond a mere percentage, what journal category exchanges will advance pedagogical theories on teaching and learning more than others will? How does one interpret the propensity of *JGHE* authors to cite other *JGHE* articles? Cynically, one might view *JGHE*’s citation pattern as a scholarly clique that generates and consumes its own studies; however, its higher impact (SJR) than other prominent geography education journals justifies reliance on its own citations. Further, with its excellent reputation, geography education scholars might find it advantageous to retrieve articles for literature reviews from this reputable source of known quality. Alternatively, perhaps the propensity for self-citation lies with an editorial staff that fosters engaging themes and discussions that localize dissemination back through the *JGHE*. Regardless, *JGHE* does not receive much cross-fertilization with the other geography education journals; the only exception was the 14 (6.6%) citations from the *Journal of Geography*.

However, those suggesting that *JGHE* authors are insular might be encouraged to learn that more than half of the citations were from journals outside geography. The top ten journals among non-geography citations were in the education subject category; the top four overall contributing journals by weighted citations included journals from all three categories. What is it about these four journals (*Journal of Geography in Higher Education*, *Science Education*, *Progress in Human Geography*, and *The Professional Geographer*) that generate such interest? Are these four journals sufficient sources to propel geographers towards Bednarz's (2000) proposed research agenda that focuses on spatial thinking and learning? To explore further, excerpts from the highest four contributing journals' "Aims and Scope" are copied here from their respective webpages:

The *Journal of Geography in Higher Education (JGHE)* was founded upon the conviction that the development of learning and teaching was vitally important to higher education. It is committed to promote, enhance and share geography learning and teaching in all institutions of higher education throughout the world, and provides a forum for geographers and others, regardless of their specialisms, to discuss common educational interests, to present the results of educational research, and to advocate new ideas (*Journal of Geography in Higher Education*, 2016).

Science Education publishes original articles on the latest issues and trends occurring internationally in science curriculum, instruction, learning, policy and preparation of science teachers with the aim to advance our knowledge of science education theory and practice (*Science Education*, 2016).

Progress in Human Geography is the peer-review journal of choice for those wanting to know about the state of the art in all areas of human geography research - philosophical, theoretical, thematic, methodological or empirical. Concerned primarily with critical reviews of current research, PiHG enables a space for debate about questions, concepts and findings of formative influence in human geography (*Progress in Human Geography*, 2016).

The Professional Geographer, initially a publication of the American Society for Professional Geographers, became a journal of the *American Association of Geographers* in 1949. It publishes short articles of academic or applied geography,

emphasizing empirical studies and methodologies. These features may range in content and approach from rigorously analytic to broadly philosophical or prescriptive. The journal provides a forum for new ideas and alternative viewpoints (*The Professional Geographer*, 2016).

These four journals together deliver a full range of scholarly perspectives. For example, the *Journal of Geography in Higher Education* is open to “new ideas” on learning and teaching. This positions the *JGHE* to be the receptacle for cutting-edge research that considers learning and teaching in unison, rather than as separate spheres. Since 27.4% of *JGHE*’s overall journal citations were self-citations, infusion from outside geography education is necessary to avoid insularity. That said, the *JGHE* enjoys a modest across-discipline connection to education via *Science Education* (15% weighted cites) and offers geographers a reputable source from trained educators familiar with learning theory, practices, and assessment strategies. Collaboration is beneficial between geographers and education specialists especially since there is limited cross training between fields. This is changing, with some dozen terminal degrees available in geography or education with emphasis in geography education (Bednarz, 2000). The next two highest contributors to *JGHE* were *Progress in Human Geography* (12%) and *The Professional Geographer* (11%). These are excellent choices, with the former targeting philosophical and theoretical and the latter both analytical and philosophical studies that contribute new ideas to geography. Therefore, the mix of journals and categories of journals contributing to *JGHE* (volume 34) via citations appears to be diverse with substantial contributions from scholars in geography education, geography, and non-geography.

Evaluating our results based on a research agenda proposed by a leading scholar in geography education shows that progress has occurred since 2000. Bednarz encouraged geographers to change their research focus from teaching strategies and methods to learning and thinking. Learning and thinking studies “present a clear, well-explained methodology to collect and analyze data” around perspectives from educational theory (Bednarz, 2000, p. 136). The idea is to move away from esoteric studies on teaching strategies and methods that often lack measured outcomes and connections with “prior research in education, geography, or geography education (Bednarz, 2000, p. 136). Bednarz found that 55% of all research articles published in the *Journal of Geography* from 1988 to 1997 were on teaching methods and strategies; whereas only 10% were on learning and thinking (Bednarz, 2000). One recent study identified the 30 most-cited geography education articles from 2009 to 2011 (Albert, Gerrish & Adu-Prah, 2017). This study revealed that 30% (9/30) of the 30 most-cited articles from this period were on learning and thinking rather than on teaching methods and strategies, institutional geography, or general interest. Further, the number one

most-cited article and three of the first four most-cited articles were learning and thinking studies; two of the first four articles were from the *Journal of Geography in Higher Education*. These two studies support the idea that pedagogic ideas and theories from education specialists have started to infuse the mindset of education geographers (Albert, Gerrish & Adu-Prah, 2017; Bednarz, 2000). Our study herein, further provides ancillary support that the *JGHE*, a dominant journal in geography education, is listening to pedagogical experts with 33% of its overall citations sourcing from education journals

There are some take-home messages of this research. Those publishing in the *JGHE* were remaining in-house (*JGHE*) for sources in their field (subdiscipline) of geography education, but were linking with two high ranking journals – *Progress in Human Geography* and *The Professional Geographer* – for their overall discipline of geography. One important finding was the degree to which *JGHE* authors were consulting education journals with *Science Education* contributing 15% of the weighted citations. This means that scholars with an interest in geography education were consulting literature from education circles. Geography education scholars should consider the *Journal of Geography in Higher Education*, *Science Education*, *Progress in Human Geography*, and *The Professional Geographer* as indispensable serials that must be available through their university libraries and included within curriculum development plans and program proposals. Reading from these journals offers an opportunity to listen to the pulse of geography education. Researchers that are knowledgeable and current have a better chance of engaging in judicious, germane, and cutting-edge studies. Therefore, articles from these four journals, and some of the other higher contributing journals, could form the basis of reading lists, required or otherwise, for graduate seminars on geography education. Further, these journals could provide the sustenance to explore ideas, theories, and discussions that support ongoing research in geography education. Prospective authors might target these journals as publication outlets because of their high-quality reputation. Articles appearing in such journals have high exposure and citation potential. More citations can provide quantitative evidence of scholarship with implications for tenure, promotion, and other academic hurdles and honorary designations.

Conclusion

Our findings have identified which journals and the extent of citation contributions to articles published in the *JGHE* during 2010. The leading journals by subject category include the *Journal of Geography in Higher Education* for geography education, *The Professional Geographer* for geography, and *Higher Education* for non-geography journals. Weighting by the percent of citations multiplied by SJR revealed that four journals – *Journal of Geography in Higher Education*, *Science Education*, *Progress in Human Geography*, and *The Professional Geographer* – contributed more than half of all citations in *JGHE*'s 2010 volume of published articles. It appears that the citations used by authors in

their 2010 *JGHE*'s articles were derived from a diverse range of journals from outside geography education. This diversity in citations, and strong contributions from education journals, dovetails with a movement that advocates less esoteric studies and instead encourages research targeting thinking and learning in geography education (Bednarz, 2000). Future research should consider a 2020 examination of *JGHE* citation sourcing for comparison with this present study. In the meantime, the authors plan to explore the other side of our original question, and ask, "Who is listening to "us" – the geography education community?"

Appendix A

Articles from Journal of Geography in Higher Education, volume 34 (2010).

Volume, Issue, Number	Article Title	Author(s)	Pages
34-1-2	Creating a community of support for graduate students and early career academics	Kenneth E. Foote	7-19
34-1-3	Lost in Translation: Cross-Cultural Experiences in Teaching Geo-Genealogy	Paul A. Longley, Alex D. Singleton, Keiji Yano & Tomoki Nakaya	21-38
34-1-4	First Steps Towards an Interactive Real-time Hazard Management Simulation	Alastair M. D. Gemmell, Ian G. Finlayson, & Philip G. Marston	39-51
34-1-5	Lifelong Learning and the Professional Development of Geography Teachers: A View from Slovenia	Karmen Kolenc Kolnik	53-58
34-1-6	Challenges and Opportunities in Cross-cultural Geographic Inquiry	Sonia Wesche, Niem Tu Huynh, Erin Nelson, & Leela Ramachandran	59-75
34-1-7	Blended Learning: The Perceptions of First-year Geography Students	Phillipa Mitchell & Pip Forer	77-89
34-1-8	Student Preparation for the International Environmental Profession	Ian Thomas & Barry Meehan	91-107
34-1-9	Geography Undergraduates into Teaching: A Five Year Experiment	John Bradbeer	109-124
34-1-10	Students as Tour Guides: Innovation in Fieldwork Assessment	Neil M. Coe & Fiona M. Smyth	125-139
34-1-11	Assessment based on exercise work and multiple-choice tests	Jan ketil Rød, Sveinung Eiksund & Olav Fjær	141-153

34-2-1	Teaching Research Methods Courses in Human Geography: Critical Reflections	Valorie A. Crooks, Heather Castleden & Ilja Tromp-van Meerveld	155-171
34-2-2	Podcasts in Support of Experiential Field Learning	Claire Jarvis & Jennifer Dickie	173-186
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