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Citation analysis for core journals in educational leadership

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Abstract

Purpose – The purpose of this paper is to establish a core serials list for "Single doctoral", Carnegie classification universities offering Doctor of Education (EdD) programs in educational leadership based on a sample of six institutions over a six-year period.

Design/methodology/approach – A citation analysis was used using a descriptive research design. The population was all dissertations accepted for the award of the EdD degree in Educational Leadership from 2005 to 2010 at six peer institutions. From this population, 20 dissertations from each institution were randomly selected during the period under study. Data were extracted from the title pages and reference lists. Extracted data were analyzed using descriptive statistics. Serial titles were ranked according to a frequency-weighted index formula, which recorded the serial titles cited by the greatest percentage of students.

Findings – It was found that the serials with the highest frequency weight depended, in part, on the period studied. The findings also showed that 84.2 per cent of the serial citations were represented by four Library of Congress classification areas: education (L); social sciences (H); medicine (R) and philosophy, psychology and religion (B). In addition, it was found that EdD students cited serials aged 10 years or less more than other sources of information materials.

Originality/value – While other citation analyses of dissertations have been done, including some that compare dissertations at more than one institution, the author could find no other study of EdD dissertations, specifically, across a nationwide group of peer institutions. Further, the author could find no other citation analysis covering as many as six continuous years, which made a difference in the most frequently cited serial titles.

Keywords Education, Educational leadership, Citation analysis, Serials, Core journals, Ed.D. dissertations

Paper type Research paper

1. Introduction

Librarians have conducted citation analysis studies for several reasons (Ashman, 2009), including:

- to determine characteristics and qualities of scholarly research in many fields and disciplines (Smyth, 2011);
- to develop a best or "core" list of information resources within a specific subject (Wray, 2011); and
- to "clarify both the information needs of researchers and what should be contained in a research library collection" (Nisonger, 1992).

This is particularly true for students and faculty of doctoral programs (Kayongo and Helm, 2012). "Dissertations clearly indicate the needs of graduate students, and also indicate the research specialties of the faculty and departments as a whole" (Nabe and Imre, 2008).

Despite being widely used, citation analysis studies' validity and reliability, especially those focusing on dissertations, have been called into question. One key concern "is the inaccuracy of the information found in the citations themselves" (Sylvia, 1998). A second concern is the assumption that doctoral students have the ability to locate, obtain and expertly use scholarly literature (Beile *et al.*, 2004). Students may most likely choose sources based on their accessibility versus their appropriateness (Kuyper-Rushing, 1999). Another concern is making collection management decisions solely on the basis of a single institution's analysis, which could present a skewed core list of information resources (Kuyper-Rushing, 1999). This last observation is the primary reason the investigator is examining data from multiple institutions. The investigator also wanted to examine whether a core list would change depending on the period studied.

2. Purpose of the study

The primary purpose is to determine whether examining citations from a group of peer institutions over a six-year period would make it possible to develop a core list of serials for libraries at Doctor of Education (EdD)-granting universities.

3. Methodology

To attain a national sketch of library resources in educational leadership, the investigator used a complex sample methodology. A peer institution selection process was implemented involving choosing from a population of institutions that offered an EdD degree in Educational Leadership via a cohort model and had the same Carnegie classification category ("Single doctoral"). The following six schools were selected: Arkansas Student University, Eastern Michigan University, Johnson & Wales University,

Rowan University, Stephen F. Austin State University and Seattle University. Next, dissertations were randomly chosen from each of the institutions. The study's initial phase concentrated on a randomly chosen sample of 60 EdD dissertations, 10 from each institution, published in 2005, 2006 and 2007 (Griffin, 2011). The current phase spotlights 120 randomly selected EdD dissertations, 20 from each from the six institutions, published from 2005 to 2010, which showed different results from Griffin (2011).

These dissertations were discovered via the ProQuest *Dissertations & Theses* database, library catalogs at the individual institutions and the OCLC *WorldCat* database. Copies of the bibliographies were attained through interlibrary services and the *Dissertations & Theses* database. A data capture structure was devised. Each dissertation was assigned an identifier, which included the institution's acronym, publication year and author's surname initial with numerical code. Next, each citation within a dissertation was color-coded to identify its resource type (serial or non-serial), publication date, number (frequency) of citations to each serial and subject dispersion (Library of Congress [LC] classification).

Serial-citation frequency was ranked from most frequent to least. However, as Waugh and Ruppel (2004) caution, this simple ranking method "would be misleading since far too much weight would be given to one student product". To construct a frequency ranking that accurately records the serials cited by the greatest percentage of students, a formula designed by Waugh and Ruppel (2004) was adapted:

$$\text{WEIGHT} = (T/D) \times C$$

In the formula above, the number of students citing a specific serial (T) was divided by number of dissertations examined (D). Next, these percentages were multiplied by the number of times the serial title was cited (C). The outcome is a weighted index that delivered the basis to rank-order the serials. Waugh and Ruppel (2004) state "Thus, the serial receiving the highest weighted index, and therefore ranked first, can be interpreted as the serial that was cited most often by the greatest percentage of students". Hence, a "core" serials list for educational leadership could be formed from rankings based on those serials with the highest frequency via a weight index.

4. Results and discussion

A total of 11,796 bibliographic citations were analyzed from 120 randomly selected Educational Leadership EdD dissertations published from 2005 to 2010 at the six selected peer institutions. Serials (4,709) were the dominant resource format, accounting for 39.9 per cent of the citations. Monographs accounted for 35.7 per cent, and the remaining 24.3 per cent of the citations were to other non-serial materials such as conference proceedings, government documents and reports (Table I). This is consistent with other citation studies in the field of education done by Broadus (1953), Mochida (1976) and Griffin (2011). The mean age for all serials and non-serials was 10.8 years and 11.8 years, respectively. Currency among serial citations was very noticeable: 67.4 per cent of serial citations (3,173) were published 10 or less years ago, 21.4 per cent (1,006) were published 11 to 20 years ago and 11.2 per cent (530) were published 21 or more years ago.

Table I Citation by format

Format	No. of citations	% of total citations
Serials	4,709	39.9
Monographs	4,217	35.7
Book chapters	730	6.2
Reports	270	2.3
Government and legal documents	553	4.7
Dissertations and theses	411	3.5
ERIC documents	274	2.3
Conference proceedings	264	2.2
Media	119	1.0
Web sites	249	2.1

There were 1,398 unique serials with 878 of them characterized as refereed or peer-reviewed. In this phase, as in Phase 1 (Griffin, 2011), however, the two heaviest weighted serials were not peer-reviewed, *Educational Leadership* (cited 136 times by 50 students) and *Phi Delta Kappan* (cited 102 times by 41 students). Of the peer-reviewed or refereed serials, *Educational Researcher* received the highest number of citations: 62 citations by 35 students.

However, illustrating the importance of longitudinal citation analysis, three of the 10 most heavily weighted serials in Phase 1 did not make the top 10 list in Phase 2: the *Journal of Negro Education*, *Theory into Practice* and *Change*. The *Journal of Negro Education*, for example, fell from No. 7 to No. 15, and *Theory into Practice* fell from No. 8 to No. 14. In addition, *Teachers College Record* moved from No. 20 to No. 8, and *Educational Administration Quarterly* moved from No. 13 to No. 6. Overall, among the top 35 (Table II) most heavily weighted serials, 25 remained the same.

Additionally, the findings showed that 84.2 per cent of the 4,709 serial citations were represented by four LC classification areas:

1 education (L), 54.9 per cent;
2 social sciences (H), 14.8 per cent;
3 medicine (R), 8.5 per cent; and
4 philosophy, psychology and religion (B), 5.9 per cent (Table III).

However, among the top 35, the education (L) classification area represented 33 of the serial titles listed. The citations in social sciences were primarily in management, leadership and research methodology. Nursing sources were the majority of the medicine citations. As nearly 45 per cent of the citations are not classified within the education LC call number range, the interdisciplinary nature of education research is reaffirmed as Thurston (1987) and Young (2001) found.

This study, just as with Thomas (2000), does not follow the Pareto principle (Crawford, 2001), better known as the "80/20 Rule" of distribution first applied to libraries by Trueswell (1969), who asserted that 80 per cent of a library's circulation is based on 20 per cent of its collection. This study shows that 80 per cent of the serial citations came from 37.3 per cent of the serial publications. One possible reason for this departure, as Eckel (2009) hypothesized, could be the increased use of serials among doctoral students versus master's-level students. Another reason could be the increasingly interdisciplinary

Table II 35 most heavily weighted serials

Rank	Serial title	ISSN	Refereed	Weight index	No. of students citing	No. of times cited	% of total serial citations
1	*Educational Leadership*	0013-1784		56.667	50	136	2.89
2	*Phi Delta Kappan*	0031-7217		34.850	41	102	2.17
3	*Education Week*	0277-4232		18.433	28	79	1.68
4	*Educational Researcher*	0013-189X	X	18.083	35	62	1.32
5	*Chronicle of Higher Education*	0009-5982		16.625	21	95	2.02
6	*Educational Administration Quarterly*	0013-161X	X	14.467	28	62	1.32
7	*American Educational Research Journal*	0002-8312	X	8.817	23	46	0.98
8	*Teachers College Record*	0161-4681	X	7.800	24	39	0.83
9	*Sociology of Education*	0038-0407	X	5.250	15	42	0.89
10	*School Administrator*	0036-6439		4.750	15	38	0.81
11	*Change*	0009-1383	X	4.533	17	32	0.68
12	*Educational Evaluation and Policy Analysis*	0162-3737	X	4.500	18	30	0.64
13	*NASSP Bulletin*	0192-6365	X	4.392	17	31	0.66
14	*Theory Into Practice*	0040-5841	X	4.275	19	27	0.57
15	*Journal of Negro Education*	0022-2984	X	4.125	11	45	0.96
16	*Journal of Educational Psychology*	0022-0663	X	3.683	13	34	0.72
17	*The Clearing House*	0009-8655	X	3.450	18	23	0.49
18	*Education*	0013-1172	X	3.400	17	24	0.51
19	*Journal of Higher Education*	0022-1546	X	3.333	16	25	0.53
20	*Journal of Educational Administration*	0957-8234	X	3.150	14	27	0.57
21	*The Journal of Educational Research*	0022-0671	X	3.033	13	28	0.59
22	*Review of Educational Research*	0034-6543	X	2.917	14	25	0.53
23	*Remedial & Special Education*	0741-9325	X	2.567	11	28	0.59
23	*Education Policy Analysis Archives*	1068-2341	X	2.567	14	22	0.47
24	*Community College Journal of Research & Practice*	1066-8926	X	2.500	12	25	0.53
25	*Peabody Journal of Education*	0161-956X	X	2.217	14	19	0.40
26	*Journal of College Student Development*	0897-5264	X	2.200	11	24	0.51
27	*Elementary School Journal*	0013-5984	X	2.100	14	18	0.38
28	*Education Digest*	0013-127X		1.842	13	17	0.36
29	*American Psychologist*	0003-066X	X	1.800	12	18	0.36
30	*New York Times*	0362-4331		1.725	9	23	0.49
31	*Principal*	0271-6062		1.700	12	17	0.36
32	*Exceptional Children*	0014-4029	X	1.667	8	25	0.53
33	*High School Journal*	0018-1498	X	1.600	12	16	0.34
33	*Harvard Educational Review*	0017-8055	X	1.600	12	16	0.34

nature of education research (Harvey, 1996; Metz, 2001). A final reason may be the growing influence of electronic database usage data on the valid application of the "80/20 Rule" (Black and Sisson, 2003/2004; Evans and Peters, 2005). A rudimentary analysis of the six peer institutions' electronic database subscriptions found that full-text databases with multidisciplinary, archival and/or business scopes are imperative for a collection serving an EdD curriculum. Examples of these are *Academic Search Complete* (EBSCO), *JStor*, *ABI Inform* (ProQuest) or *Business Source Premier* (EBSCO).

5. Conclusion

This study, a citation analysis focusing on a randomly chosen sample of 120 educational leadership EdD dissertations published from 2005 to 2010 from six peer institutions, offers a methodology and data to assist other librarians in identifying a uniform core of journals for doctoral studies in educational leadership. Citation studies reveal compelling data on what research materials are used among doctoral students within a discipline (Herubel, 1991). However, as this study shows, it is important to evaluate citations over multiple institutions and years. Key findings from this study are:

- A core list of 35 serials was identified that showed consistency among institutions and over time.
- Average age of serial citations in educational leadership: 10.8 years; 67.4 per cent of the citations aged 10 years or less.
- The top two serials cited were not peer-reviewed.
- The interdisciplinary nature of education research is reaffirmed.

An area for further research would be locally based citation analyses on educational leadership dissertations to determine whether any correlation exists with the findings from this multi-institution study to try to understand any geographically specific serial preferences.

Table III Serial citations by LC class

LC class	LC class (Title)	No. of citations	% of serial citations
A	General works	186	3.9
B	Philosophy, psychology, religion	280	5.9
C, D, E, F	History	31	0.7
G	Geography, anthropology, recreation	117	2.5
H	Social sciences	699	14.8
J	Political science	32	0.7
K	Law	43	0.9
L	Education	2,585	54.9
M	Music	22	0.5
N	Fine arts	10	0.2
P	Language and literature	40	0.9
Q	Science	75	1.6
R	Medicine	402	8.5
S	Agriculture	4	0.01
T	Technology	41	0.9
U, V	Military/Naval science	13	0.3
Z	Library science	51	1.1
Unknown	Unknown	78	1.7

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