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Citation Analysis and Journal Impact in School Psychology: 1995-2004

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CITATION ANALYSIS AND JOURNAL IMPACT IN SCHOOL PSYCHOLOGY: 1995-2004

by

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The present study is a citation analysis of the school psychology literature from 1995-2004. Data from six major journals over a 10-year period were analyzed to determine the disciplines, books, and authors who most heavily impacted school psychology. Findings suggest that school psychology is characterized by high levels of interdisciplinary collaboration, and that the school psychology literature maintains relatively low self-citation and cross-citation rates when compared to other domains of psychology. As in previous investigations, the field of education was found to be less influential than the field of special education. The impact of behavior analysis varied significantly by school psychology journal outlet, and the *Journal of Applied Behavior Analysis* was found to be the dominant behavior analytic journal in school psychology. *Best Practices in School Psychology III* (Thomas and Grimes, 1995) was the most frequently cited text over the 10-year period, while A.S. Kaufman was the most frequently cited author. The impact of contemporary works and the individual school psychology journal outlets were discussed, as well as implications of the current findings.

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CHAPTER I

INTRODUCTION

Formal Communication in School Psychology

Researchers have routinely evaluated formal communication (i.e., professional publications) in school psychology. The earliest investigations into formal communication in the field involve the study of publications that pre-date the inception of the school psychology journals (Frisby, 1998). Bindman's (1964) bibliography was one early study. His bibliography, according to Fagan (1986), cited 35 separate journals and provided a record of school psychology publications from 1892 to 1963.

Inquiries into formal communication across the discipline have increased in frequency and sophistication in method of investigation since the development of several journals which maintain a school psychology focus (Frisby, 1998). Many of these studies also extend far beyond bibliographies, published literature reviews, and surveys in scope; they incorporate bibliometric data from entire volumes and years from multiple journals and texts.

Three examples of such bibliometric investigations from the recent school psychology literature are Skinner, Robinson, Brown, and Cates (1999), Carper and Williams (2004), and Davis, Zanger, Gerrard-Morris, Roberts, and Robinson (2005). Skinner et al. (1999) describe women's participation in formal communication across three leading school psychology journals for ten consecutive years. Carper and Williams (2004) provide a five-year quantitative summary of publications generated by American Psychological Association (APA) Accredited School Psychology Programs in the United

States, and each article's corresponding journal outlet and article theme. Davis et al. (2005) illustrate author productivity and collaboration among four school psychology journals for a thirteen-year period.

Bibliometric Citation Analysis

Other school psychology professionals have adopted a publication analysis technique from the field of library and information science. The technique is bibliometric citation analysis; researchers have used this method to assess the structure and trends of formal communication in school psychology (Kawano, Kehle, Clark, & Jenson, 1993; Frisby, 1998; Kwak, 2002). Smith (1981), a library and information scientist, defines bibliometric citation analysis as the study of the relationship between "a part or the whole of the cited document and a part or the whole of the citing document" (p. 83). Smith goes on to describe citations as "signposts" that gauge researcher activity by specifying the source of their information (p. 85).

Citation analyses serve a variety of applications (Budd, 1990; Smith, 1981). In psychology, citation analysis has been utilized to 1) demonstrate the diminishing impact of experimental research on applied research (Poling, Picker, Grossett, Hall-Johnson, and Hollbrook, 1981; Poling, Alling, & Fuqua, 1994); 2) evaluate the impact or function of a journal within a discipline (Carr & Britton; 2003; Cook, 1983; Rushton & Roediger, 1978); 3) evaluate the impact of a discipline over other disciplines or subspecialties (Kazdin, 1975); 4) determine the influence of review articles within a subspecialty (Guthrie, Seifert, & Mosberg, 1983); 5) debate the proliferation or demise of psychological theories and paradigms (Bagby, Parker, & Bury, 1990; Friman, Allen, Kerwin, & Larzelere, 1993; Robins & Craik, 1994); 6) provide historical accounts

(Walberg & Haertel, 1992); 7) identify significant psychologists (Howard & Curtin, 1993; Kasmer, Haugtvedt, Steidley, 1988; Watkins & Bradford, 1988), and; 8) assess psychology's overall standing as a scientific field (Simonton, 2004). Other investigators have studied citation bias and error in citation analysis specific to psychology (Christensen-Szalanski & Beach, 1984; Swatz, 1979).

Bibliometric citation analysis has been applied more narrowly in school psychology. Citation analysis has largely been directed toward the assessment of formal communication. Citation studies have measured the extent that school psychology literature influences, and is influenced by, publications and ideas from other fields of study (Kawano, et al., 1993; Frisby, 1998; Kwak, 2002). Patterns of "insularity" and interdisciplinary collaboration have been of particular interest (Kwak, 2002, p. 9). Insularity in bibliometric terms is the degree to which researchers within the discipline cite other school psychology literature. Insularity in school psychology has been appraised by calculating self-citation and cross-citation rates (Kawano et al., 1993; Frisby, 1998; Kwak, 2002). Formal interdisciplinary collaboration is the polar opposite of insularity. It is the degree to which school psychology researchers cite literature outside the discipline and in related fields. Interdisciplinary collaboration in school psychology has been evaluated by calculating shared-citation rates, within-network citation rates, or citation rates from a pool of journals which represent a distinct area of study (Kawano et al., 1993; Frisby, 1998; Kwak, 2002).

Literature Review of Citation Analyses in School Psychology

Although Kwak (2002), Frisby (1998), and Kawano, Kehle, Clark, and Jenson (1993) assessed formal communication, influence, and insularity, their focus and the

methods they used differed substantially. Kawano et al. (1993) were the first in the field to measure citation patterns and discipline insularity among school psychology and related scientific journals. The investigators formed a "network" of journals that were routinely listed in the *Journal Citation Report* as journals that were either frequently cited by *Journal of School Psychology (JSP)* or *Psychology in the Schools (PITS)* or journals which *JSP* or *PITS* frequently cited. Kawano et al. then calculated the total number of citations from the network journals for 1978-1985. They also found the percentage of self-citations and within-network citations as a measure of discipline insularity. Finally, these numbers were used to determine the statistical Euclidian value between the journals. The statistical distance between the journals was entered into a scaling analysis, and correlation and cluster analysis procedures were implemented for two nonconsecutive years, 1978 and 1985.

Kawano et al.'s findings showed that 23 journals met journal entry criteria for the network. Approximately 52,000 citations were analyzed across the 23 journals for 1985. The average within-network citation rate for all 23 journals during 1985 was 21%, whereas the within-network citation rates for *JSP*, *PITS*, and *SPR* were 36%, 37%, and 28%, respectively. Similarly, the average self-citation rate for all 23 journals during 1985 was 8%, whereas the self-citation rates for *JSP*, *PITS*, and *SPR* were 6%, 7%, and 4%, respectively.

Cluster analyses of the 1978 data distributed the 23 journals into four groups. Interestingly, the school psychology journals fell into two different clusters. *JSP* and *School Psychology Review* (*SPR*) were grouped with eight journals from various subspecialties, whereas *PITS* was clustered with four special education journals. The

cluster procedure for the 1985 data showed disparate results. The cluster analysis yielded five groupings. One of the five clusters was restricted to three school psychology journals: *JSP*, *SPR*, and *PITS*.

Kawano et al. utilized other statistical procedures to provide additional information about formal communication in school psychology. The investigators calculated a "storer/feeder" ratio to demonstrate the number of times the journal network cites a particular journal (e.g., *SPR*) relative to the number of times that particular journal (e.g., *SPR*) cites articles from all other journals in the network (p. 414). All school psychology journals were found to have storer functions (i.e., ratios resulting in a value greater than 1.00). *SPR* was found to have significant storing power.

External and internal indices were constructed to determine the impact size of school psychology journals on related fields and the impact of related fields on school psychology. Kawano et al. used a variety of statistical tools (e.g., t-tests, Pearson's r, and ANOVA) during hypothesis testing. Results showed no significant mean differences across the school psychology journals except when citation data from all three school psychology journals were pooled. Special education had the largest impact size on school psychology, followed by psychology. Interestingly, education failed to demonstrate a strong influence on school psychology.

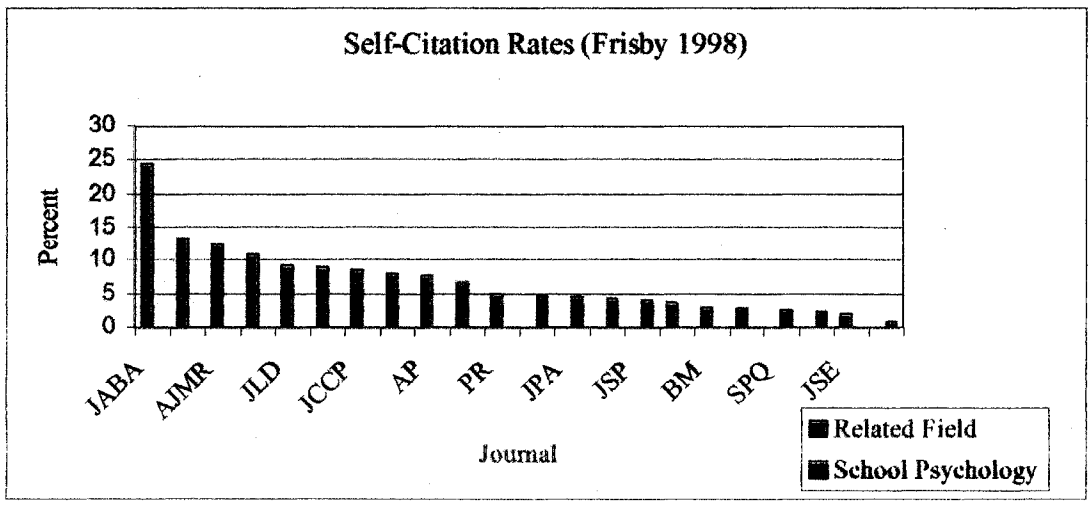
Frisby (1998) examined formal patterns of communication in school psychology from 1990-1994. Frisby broadened the scope of bibliometric citation analysis in the field of school psychology by evaluating five consecutive years of citations from all major school psychology journals: *PITS*, *SPR*, *JSP*, *SPQ*, *School Psychology International* (*SPI*), the *Canadian Journal of School Psychology* (*CJSP*), and the *Journal of*

Psychoeducational Assessment (*JPA*). Frisby concomitantly analyzed all citations from 15 journals in related fields like child development, psychology, education, and behavior analysis across the five consecutive years. The 15 journals were selected based on the frequency of their listings in the 1992 *SSCI:JCR* lists.

Overall, Frisby examined 236,469 citations, including 31,210 citations from the major school psychology journals. Frisby calculated the self-citation rates of the major school psychology journal articles, and compared these rates to self-citation rates from 15 scientific journals in the other related fields. Frisby's results demonstrate that self-citation rates among the major school psychology journals are low: *SPR* (4.6%), *JPA* (4.5%), *PITS* (4.2%), *JSP* (4.1%), SPQ (2.6%), *SPI* (2.2), *CJSP* (0.8%). These results are consistent with Kawano et al.'s (1993) self-citation rates. Self-citation rates from the related fields generally fell below fourteen percent with one outlier journal, the *Journal of Applied Behavior Analysis*, with a self-citation rate of nearly 25%. Table 1-1 illustrates the distribution of self-citation rates from Frisby's analysis.

Table 1-1

Self-Citation Rates in School Psychology Journals (Frisby, 1998)



Using a slightly modified procedure from Kawano et al. (1993), Frisby calculated a feeder/storer ratio to illustrate the number of times a journal is cited by other journals included in the study relative to the number of times the other journals in the study cited that particular journal. All school psychology journals were found to perform storer functions. *JSP*, *PITS*, and *SPR* were found to have the highest ratios at 0.84, 0.60, and 0.53, respectively, while *SPQ* and *CJSP* were found to have the lowest feeder/storer ratios at 0.04 and 0.02, respectively. Again, Frisby's results were consistent with Kawano et al's (1993) in that school psychology journals more frequently store than feed information to other journals.

Kwak (2002) extended the work of Kawano et al. and Frisby by analyzing all citations from 1995-1999 from *JSP*, *PITS*, *SPI*, *SPQ*, and *SPR*. Kwak analyzed a total of 31,520 citations. Kwak found low self-citation rates across each of the school psychology journals: *JSP* (3.8%), *PITS* (3.3%), *SPI* (1.8%), *SPQ* (3.4%), and *SPR* (4.6%). She found slightly higher cross-citation rates (i.e., the percent of times a school psychology journal cites any of the other school psychology journals) for all journals except *SPR*: *JSP* (6.1%), *PITS* (5.2%), *SPI* (4.1%), *SPQ* (8.7%), and *SPR* (4.1%).

Kwak found that the majority of journal citations from the five school psychology journal publications were from journals outside school psychology. On average, nine in every ten citations from *JSP*, *PITS*, *SPI*, *SPQ*, and *SPR* originated from sources outside the five school psychology journals. The six most frequently cited journals outside school psychology in order prominence were the *Journal of Applied Behavior Analysis*, *American Psychologist*, *Child Development*, *Journal of Educational Psychology*, *Exceptional Children*, and *Journal of Learning Disabilities*.

Although Kwak did not determine the impact factor of each of the related disciplines on school psychology (i.e., education, special education, psychology), she determined the influence of behavior analysis on school psychology. She found that the impact of behavior analysis varied significantly across journals. *SPQ* articles most frequently cited the behavior analysis journals. Nearly 8% of all citations from *SPQ* referenced behavior analysis *journals, whereas only 2.6%, 1.7%, 1.8%, and 0.25% of the citations from SPR, PITS, JSP*, and *SPI*, respectively, cited behavior analysis journals.

Kwak also broadened the work of Oakland (1984) by examining the contribution of books in the school psychology literature. Whereas Oakland found Wechsler's *WISC and WISC-R Manual* and Caplan's (1971) *The Theory of Practice and Mental Health Consultation* to be the most frequently referenced and cited books, respectively, Kwak found that Thomas and Grimes (1995) *Best Practices in School Psychology III* was the most frequently cited book. Moreover, Kwak's analysis isolated the 10 most frequently cited books from 1995-1999 as listed in Table 1-2.

Table 1-2

Books Most Frequently Cited in School Psychology Journals (Kwak, 2002)

Rank	Most Frequently Cited Books
1	Thomas, A. & Grimes (1995) Best Practices in School Psychology III
2	Reynolds, C.R. & Gutkin, T.B. (1982) The Handbook of School Psychology
3	Flanagan, D.P., Genshaft, J.L. & Harrison, P.L. (1997) Contemporary Intellectual Assessment: Theories, Tests, and Issues.
4	Shinn, M. (1989) Curriculum Based Measurement: Assessing Special Children.
5	American Psychiatric Association (1994) Diagnostic and Statistical Manual of Mental Disorder IV
6	Bergan, J.R. & Kratochwill, T.R. (1990) Behavioral Consultation and Therapy
7	Shepard, L.A. & Smith, M.L. (1989) Flunking Grades: Research and Policies on Retention

Table 1-2 - Continued

Rank	Most Frequently Cited Books
8	Stoner, G., Shinn, M.R. & Walker, Y.H. (1991). Interventions for Achievement and Behavior Problems.
9	Graden, J.L., Zins, J.E. & Curtis, M.J. (1988) Alternative Educational Delivery Systems: Enhancing Instructional Options for all Students.
10	Kratochill, T.R. (1985) Advances in School Psychology

Summary of Citation Studies in School Psychology

Kwak (2002), Frisby (1998), and Kawano et al.'s (1993) studies suggest that school psychology is not an insular discipline. Rather, formal communication in school psychology appears to be characterized by high levels of interdisciplinary collaboration. School psychology journals have storer functions (Frisby, 1998; Kawano et al., 1993). That is, school psychology journals receive and incorporate more information from other journals than they feed to those same journals. Finally, special education and psychology have the greatest general impact on school psychology journals. Behavior analysis substantially influences some, but not other, school psychology journals (Kawano et al, 1993; Kwak, 2002).

Limitations of Citation Studies

Kwak (2002), Frisby (1998), and Kawano et al.'s (1993) studies are subject to all limitations inherent to bibliometric citation analysis. These limitations are well documented in both school psychology and the library and information science literature (see Garfield, 1979; Smith, 1981; and Kwak, 2002 for reviews). The limitations involve the manner in which researchers draw on the cited text or fail to cite original sources, and

many assumptions underlying citation use. The limitations also concern error in procedures necessary to obtain citation data. Hand counts and/or the copying, scanning, and delimiting necessary to obtain a citation database for computer manipulation have the potential to engender substantial error.

Rationale for Additional Citation Research

Periodic bibliometric citation analyses are beneficial to the discipline of school psychology for several reasons. First, although bibliometric citation analysis possesses certain limitations, citation analysis has been found to be a reliable measure of "the strength of relationships among journals," and a sign of the impact one discipline has on another (Kawano et al., 1993, p. 408). Second, citation analysis is a technique that must be used repeatedly to monitor trends and influences in formal communication across a discipline. As Kwak (2002) maintains, citation findings do not generalize to years or texts beyond those units studied. Another basis for additional citation studies is the scope of study that citation analysis permits. Few other methods of investigation allow for the relatively easy aggregation of complete data sets across multiple journals, texts, and years, in a minimally invasive manner (Garfield, 1979; Smith, 1981).

Finally, citation analysis can impart valuable and practical information about the advancement and maturity of school psychology as a discipline. Citation analyses can reveal changes in the type and frequency of publications cited; the source of the cited information; and the ratio of the information received proportionate to that supplied. Findings from citation analysis can benefit professional preparation programs in school psychology, which are charged with the education of pre-service school psychologists. Such findings may direct training programs in establishing lists of the most frequently

referenced historical and contemporary publications within school psychology. Seemingly, all pre-service school psychologists should gain familiarity with these publications. Citation studies can also guide professional preparation programs on specific content areas in school psychology, and in the introduction or discontinuation of courses based on the increasing or decreasing impact of the particular area on the field of school psychology.

Purpose of the Present Study

The purpose of the present study is to replicate and extend the study of formal communication in school psychology from 1995-2004 with bibliometric citation techniques, while minimizing the error traditionally associated with citation studies by accessing an electronically and independently maintained citation database. The following research questions will be addressed in the current study.

Research Questions

Research Question 1: What is the mean self-citation rate for the school psychology journals? This percentage will indicate the degree to which each journal cites its own publications.

Research Question 2: What is the mean cross-citation rate for the school psychology journals? This percentage will indicate the degree to which each journal receives and incorporates information from other journals in school psychology.

Research Question 3: What is the frequency and percent of article citations that were not determined to be self or cross citations? This percentage will indicate the degree to

which school psychology is an insular discipline or, conversely, is a field maintained by interdisciplinary collaboration.

Research Question 4: What journals were most frequently cited in the major school psychology journals from 1995-2004?

Research Question 5-7: Overall, what percent of citations was from journals with a behavior analytic, education, or special education focus? These percentages will define the impact of specific interdisciplinary fields on recent school psychology literature

Research Question 8: Which books were the most frequency cited?

Research Question 9: Which first authors/editors were the most frequency cited?

Research Question 10: Which school psychology journal appears to have the greatest impact independent of journal size? This question is worth examining because, as Meacham (1984) notes, a journal that produces twice as many articles as a second journal is likely to be referenced more frequently regardless of journal quality.

Research Question 11: To what extent are school psychology authors influenced by relatively new literature, as compared to older publications?

CHAPTER II

METHOD

Journal Pool Selection

Lists of journals that are relevant to school psychology were generated on several search engines. Search engines were Google.com, Psychwatch.com, and PsychInfo. All journals included in previous bibliometric studies in school psychology were also added to the list of potential journals. The criteria for journal inclusion in the study were as follows. Each journal must have an overall focus on the field of school psychology as stated in the purpose and scope of the journal. Each journal must have been previously analyzed in a bibliometric study in the field of school psychology. Finally, each journal's citations must be available on the ISI Web of Knowledge – Web of Science 7.1 in the Socail Sciences Citation Index (SSCI)

Six journals met each condition and were thereby included in the journal pool. Five of the six journals, *PITS*, *SPR*, *SPI*, *JSP*, and *SPQ*, are traditionally considered the core journals of school psychology. Their influence and ability to represent the field of school psychology is well documented in the literature (Clark & Reynold, 1981; Little, 1997; Webster et al. 1993; Frisby, 1998; Carper & Williams; 2004).

The sixth journal, the *Journal of Psychoeducational Assessment* (*JPA*), is not widely recognized in recent school psychology literature as a major journal in the field. However, JPA is traditionally connected to the discipline. Frisby (1998) analyzed *JPA* citations, reasoning that JPA has often been coupled with the core school psychology journals in previous bibliometric investigations, such as Levinson, Barker, and Lillenstein

(1994) and Webster, Hall, and Bolen (1993). Little (1997) similarly included *JPA*. *JPA* also unequivocally met the other criteria for journal selection, because the opening sentence of the *JPA* online description states that, "*JPA* provides school psychologists current information regarding psychological and educational assessment practices, legal mandates, and instrumentation" (2004, p. 1). For these reasons, *JPA* was entered in the current investigation as a major school psychology journal.

Other journals were appropriate for the study; however, they failed to meet at least one criterion. Two such journals are the *Canadian Journal of School Psychology* and *Proven Practice: Prevention and Remediation Solutions to Schools*. Neither journal was available in the SSCI on the Web of Science 7.1. Other salient journals were excluded due to their scopes extending beyond school psychology. For example, the *Journal of Educational and Psychological Consultation* (*JEPC*), which had a significant role in the Future of School Psychology Conference of 2002, was excluded because the primary focus of *JEPC* is consultation in education and psychology, as opposed to consultation in school psychology.

Overall, the six journals included in the study corresponded nicely to the journals included in prior citation analyses in the field of school psychology. Three of the five journals (i.e., *PITS*, *SPR*, and *JSP*) were employed in Kawano, Kehle, Clark, and Jenson's (1993) research, while five of the six journals corresponded to those in Kwak's (2002) analysis. *PITS*, *SPR*, *SPI*, *JSP*, *SPQ*, and *JPA* were six of the seven journals Frisby (1998) utilized in his study.

Citation Pool Selection

All cited references available from 1995-2004 on Social Sciences Citation Index (SSCI) database on the Web of Science 7.1 for the six journals were used in the analysis. Kwak's (2002) procedures for citation selection were replicated. That is, citations from all types of journal publications (e.g., research article, book review, editorial comments) were included, on the condition that every publication contained at least one cited reference. Citations from all volumes across the six journals for ten years were included to the extent that SSCI correctly copied and uploaded the citation information to the Web of Science 7.1. The current citation pool is thus assumed to be the entire population of cited references for the stated years.

Procedures

Step One: Searching

In the introductory web page to the Web of Science 7.1, the investigator marked the Social Sciences Citation Index (SSCI) as the citation database. The investigator marked the range of years from 1995 to 2004 as the time span of interest, and then selected the General Search option. The investigator typed the journal name under the Source Title option on the General Search web page, and clicked on the Search button at the bottom of the page.

Step Two: Marking

A summary of the search results appeared on the following screen. The investigator selected the entire range of records for marking when the search generated

500 or fewer records. The investigator marked the records by clicking on the Submit button after entering the range of records in the box on the far right side of the web page. The Web of Science 7.1 has the capacity to hold 500 records on a marked list. When a search produced more than 500 records, then the investigator selected approximately half the records to create the first marked list, and then placed the remaining half on a second marked list.

Step Three: Output Variables

After the desired number of records was marked, the number became visible in blue font in a box on the far right side of the web page. The investigator clicked on the number of articles in blue font to make available the output options. To obtain the citations, the investigator clicked on the box adjacent to Cited References.

Step Four: Data Cleaning and Manipulation

Cited references exported from the Web of Science contain five fields: first author; publication date, title or journal name, volume, and page number. Table 2-1 illustrates the format of the exported data.

Table 2-1

Format of Exported Data

First Author (FA)	Publication Date (PD)	Title or Journal Name (T/JN)	Volume (V)	Page Number (PN)
CR BENNER EH	1983	MEAS EVAL COUNS DEV	V16	P127

Additional fields were inserted to facilitate data analysis and reliability checks. The first field was the year in which the cited reference appeared in the article (i.e., 1995, 1996, 1997, 1998, 1999, 2000, 2001, 2002, 2003 or 2004). The inclusion of this first field was necessary to analyze the citations by year. The exported files contained citations in reverse chronological order. For example, citations from articles published in 2003 would be positioned at the beginning of the file, whereas citations published in 1995 would be positioned near the bottom of the file.

Two other inserted fields specify the school psychology journal in which the cited reference appeared (i.e., *PITS*, *SPR*, *SPI*, *JSP*, *SPQ*, and *JPA*) and whether the source of citation is a journal or book. The last two inserted fields contained a storage location for reliability data, as shown in Table 2-2.

Table 2-2

Fields with Reliability Data Included

FA	PD	T/JN	V	PN	Date Cited	School Psych Journal	Journal=1 Book=2	R1	R2
CR BENN ER EH	1983	MEAS EVAL COUNS DEV	V1 6	P127	1998	SPI	1		

Step Five: Research Questions and Data Analysis

Two programs were used to analyze the data: Microsoft Excel and the Statistical Package for Social Sciences (SPSS) 14.0. The first statistic obtained was the total number of citations per journal per year, as well as the density of cited references (i.e.,

number of citations per year divided by number of pages per year) across each journal. Basic functions such as "sort," "rank-orderings," "frequencies," and "descriptive statistics" were then applied to answer each of the research questions delineated in the introductory section.

Research Questions and Data Analysis

Research Question 1: What is the mean self-citation rate for the school psychology journals?

The citation database for each journal was divided into book citations (i.e, citations whose original source was a book, book chapter, manual, etc.) and journal article citations (i.e., citations whose original source was a journal). All book citations were excluded from the analysis. The investigator tallied the total number of journal article citations. The investigator calculated the number of citations whose original publication source and school psychology referencing source were an exact match, and then divided by this number by the total number of journal citations. The resulting value was multiplied by 100%. The mean self-citation rate was found by summing the individual self-citation rates for the six school psychology journals, dividing by six, and multiplying by 100%.

Research Question 2: What is the mean cross-citation rate for the school psychology journals?

The citation database for each journal was divided into book citations and journal article citations. All book citations were excluded from the analysis. The investigator calculated the number of citations whose original publication source was one of the six

school psychology journals but was not the specific school psychology journal in which the cited reference appeared. This number was then divided by the total number of journal citations and multiplied by 100%. The mean cross-citation rate was found by summing the individual cross-citation rates for the six school psychology journals, dividing by six, and multiplying by 100%.

Research Question 3: What is the mean citation rate for journals that do not maintain a specific school psychology focus?

The investigator summed the self-citation and cross-citation rates for each journal. The resulting value was subtracted from 100 to determine the percent of citations appearing in each school psychology journal whose original source is a journal other than the major school psychology journals. The mean citation rate was found by summing the individual citation rates for the six school psychology journals, dividing by six, and multiplying by 100%.

Research Question 4: What journals were most frequently cited in the major school psychology journals from 1995-2004?

The investigator conducted a sort by journal/book name and generated a frequency table in SPSS. The frequency tables were analyzed by the investigator to determine the 10 most frequently referenced journals in *JPA, JSP, PITS, SPI, SPQ*, and *SPQ* from 1995-2004. All school psychology journals were analyzed collectively across the 10 year period, and the investigator located the twenty most frequently cited journals from a frequency table.

Research Question 5: What percent of citations originate from journals with a behavior analytic focus?

A list of behavior analytic journals was compiled from three recent bibliometric citation analyses specifically addressing behavior analysis in relation to citation impact: Kwak (2002), Carr and Britton (2003), and Carr and Stewart (2005). The list contained journals with an applied or experimental focus. A simple tally of the total number of behavioral analytic citations was generated with a frequency table. The total number was then converted to a percent of citations over the 10-year span.

Research Question 6: What percent of citations originate from journals with an education focus?

A list of education journals was generated from bibliometric studies specifically addressing education and citation impact: (Budd, 1990, Frisby, 1998, Kawano et al., 1993). The list of journals served as base. Citations from other journals were also included if 1) the journal name included the keyword education, but was not a subspecialty in psychology (e.g., journals in educational psychology were not included), 2) the journal focused on school personnel excluding medical and psychological staff (e.g., Elementary School Teacher, Reading Teacher, Principal), or 3) the journal focused on a specific content area in education relevant to all children (e.g., Reading and Writing, Reading and Writing Quarterly). Journals were not limited by age of target audience. For instance, education journals relevant to pre-kindergarten programs, elementary, middle school, high school, and higher education were included, as well as journals with

a community education interest. Journals with a special education focus were excluded from the count.

A simple tally of the total number of citations from journals meeting these criteria was generated with a frequency table, and the raw number was thereafter converted to a percent of citations over the 10-year span.

Research Question 7: What percent of citations originate from journals with a special education focus?

The basis for the search for citations from journals with a special education focus was the areas of exceptionality under the Individuals with Disabilities Education Improvement Act of 2004 (IDEA, 2004). The major areas of exceptionality are autism, blind or partially sighted, deaf or hard of hearing, developmental disability, mental impairment, orthopedic impairment, other health impairment, specific learning disability including dyslexia, emotional behavioral disorder, speech or language impairment, and traumatic brain injury. All journals that maintained a focus on one or more of the areas of exceptionality or on special education, in general, were incorporated in the current investigation as a special education journal. A count of the total number of citations from journals meeting the special education journal criteria was generated with a frequency table, and the raw number was converted to a percent of citations over the 10-year span.

Research Question 8: Which books were the most frequently cited?

A sort function was performed by book/journal title followed by a descriptive frequency statistic. The investigator then hand checked the top ten books as listed by the frequency count to ensure that no two books from the list had identical titles or

publication dates which would skew that book's position in the ranking. The procedure was conducted separately with each of the six school psychology journals, and then collectively to determine the books that were most frequently cited when all school psychology citations were analyzed in an aggregate database. Only the top 10 books were listed in the results tables unless two or more books were tied for the last position.

Research Question 9: Which first authors or editors were most frequently cited?

A sort function was performed by author or editor name, and a frequency table was generated. The procedure was conducted separately with each of the six school psychology journals, and then collectively to find the authors/editors that were most frequently cited when all school psychology citations were analyzed in an aggregate database. The top twenty first authors/editors were listed in the results section tables per individual school psychology journal over the 10-year period, and the top forty first authors/editors were noted in the result section table when all citations were analyzed collectively over the same time span. Only first authors/editors were available on the Web of Science 7.0 citation database.

Research Question 10: Which school psychology journal appeared to have the greatest impact independent of journal size?

The impact factor statistic was derived directly from the SSCI on the Web of Science. Each school psychology journal was entered into the impact statistic generator with the years of interest being 1995-2004.

Research Question 11: To what extent are school psychology authors influenced by relatively new literature, as compared to older publications?

A sort function was conducted with the aggregate database containing all school psychology citations from 1995-2004. The citations were sorted by the year in which they were referenced. All citations from 2004 were analyzed by year in which the cited reference was originally published. A histogram of the cited reference distribution for 2004 was produced on SPSS, as well as other descriptive statistics measuring central tendency. The same procedure was replicated for the remaining 9 years of school psychology citations.

Reliability Measures

Traditionally, bibliometric investigations, especially citation analyses, have required considerable manpower. The citations from each journal must be copied, scanned, delimited, and analyzed (e.g., Kwak, 2002) or counted from the respective journals (e.g., Frisby 1998). The sheer volume of each task makes such investigations subject to a significant degree of potential error. Moreover, investigations with a high number of procedures that involve direct manipulation of the data increase the probability of human error. Error in citation analysis obviously may include miscounts when cited references are counted directly from the journals or the SSCI. When citations analysis procedures consist of scanning, copying, and delimiting, omission or duplication of citations may occur at each step.

Researchers participating in bibliometric investigations now have the luxury of extracting data directly from computer data bases. Although SSCI is a standard tool for bibliometric study, reliability measures remain useful due to errors of omission and

duplication when downloading data from the Web of Science. In the present investigation, reliability of the citations was assessed across all years and all journals. Five percent of all volumes were randomly selected and manually checked to measure the degree to which citations from the journals match citations from the data files used in the current investigation. Reliability was calculated using a point-by-point method.

CHAPTER III

RESULTS

Collectively, 74,675 citations from 2370 school psychology journal publications were analyzed. *SPR* and *PITS* were the largest contributors to the overall citation pool, whereas *JPA* and *SPI* contributed the fewest citations to the pool (Table 3-1).

The average number of references per article varied considerably. JPA exhibited the lowest average number of citations per journal publication, 20.1. In contrast to the other journals, *JPA* contained a relatively high ratio of test and book reviews to general articles. The international journal, *SPI*, and *PITS* contained 25.6 and 28.5 references per article. The three remaining school psychology journals maintained a substantially higher number of references per publication: *JSP* (37.7), *SPQ* (38.6), and *SPR* (39.7).

Table 3-1

Total Number of Citations and Articles by Journal Outlet

Journal Name	JPA	JSP	PITS	SPI	SPQ	SPR	Total
Total Number of Articles 1995-2004	348	297	606	347	277	495	2370
Total Number of Citations 1995-2004	6,979	11,201	17,254	8,886	10,706	19,649	74,675
Percent of Total Citations	9.3%	15.0%	23.1%	11.9%	14.3%	26.3%	100%

A measure of reliability was obtained to determine the extent to which the citations from the ISI Web of Knowledge – Web of Science 7.1 in the Social Sciences Index (SSCI) corresponded to the citations found in the original publication outlet. Five percent of each journal's citations were manually checked against the citation results obtained from the Web of Science 7.1 for point-by-point reliability. A citation from the original journal outlet was determined reliable when its counterpart was found within the citation file obtained from the Web of Science 7.1. A citation was deemed unreliable when the citation found in the journal outlet was absent from the Web of Science data file. Such a citation was coded negatively, and then manually entered into the working file from the Web of Science to increase accuracy of known errors.

The point-by point reliability results for each journal estimate were sound. For each journal, the number of omissions was minimal, and did not exceed 0.5% of the reliability sample (Table 3-2). The high reliability estimates are believed to be representative of the 74,675 citations included in this study given the professional quality of the data base and the wide distribution of the reliability checks across the journal outlets and publication years.

Table 3-2

Reliability Results

Journal Name	JPA	JSP	PITS	SPI	SPQ	SPR
Total number of citations Checked	347	558	857	442	536	986
Raw number of citation omissions	2	2	4	0	1	6
Reliability	99.4%	99.6%	99.5%	100%	99.8%	99.6%

The investigator coded each of the 74,675 citations as either a journal article or not a journal article. The latter citations included all books, book chapters, professional meeting references, government documents, dissertation and theses, ERIC documents, legislative citations, and other unpublished manuscripts. Seventy-four percent of the total number of references were journal articles.

A second measure of error or reliability was calculated to determine the extent to which the investigator accurately coded the 74, 675 citations as either journal articles or non-journal articles. Five percent of each journal's citations were manually checked to determine the accuracy of the investigator's coding. If the investigator correctly coded the abbreviated form of the citation provided by the Web of Science when compared with the unabbreviated, hard copy of the citation, the particular citation was scored as accurate. If the investigator's coding was found to be inaccurate, the error was manually fixed, and the coding was scored as inaccurate. Findings (Table 3-3) indicate that the investigator was 97.9%-99.3% accurate when coding the abbreviated form of the citations contained within the Web of Science data base.

Table 3-3

Error Estimate Results of Citation Coding

Journal Name	JPA	JSP	PITS	SPI	SPQ	SPR
Total number of citations Checked	347	558	857	442	536	986
Raw number of coding errors	5	6	10	3	11	12
Error Estimate	1.4%	1.1%	1.2%	0.7%	2.1%	1.2%

Research Question 1: What is the mean self-citation rate for the school psychology journals?

When analyzed collectively, 5.7% of all citations from 1995-2004 in the six school psychology journals were self-citations. Table 3-4 shows self-citation rates for individual journals. *SPR* and *JPA* were the journals with the two highest self-citation rates at 10.7% and 9.8%, respectively. This means, for example, that approximately 10% of all articles referenced in *SPR* in the 10-year span were originally published within *SPR*. The journal outlets that were least likely to self-reference their own articles were found to be *SPI* and *PITS* at 2.1% and 3.2%, respectively.

Table 3-4

Citation Patterns in Six School Psychology Journals from 1995-2004

Journal Name	JPA	JSP	PITS	SPI	SPQ	SPR	Mean Citation Rate for All Journals
Self citations	361 (9.8%)	373 (5.4%)	556 (3.2%)	183 (2.1%)	434 (6.3%)	1,284 (10.7%)	3191 (5.7%)
Cross citations	454 (12.4%)	740 (10.7%)	1266 (7.3%)	423 (4.8%)	1163 (17.0%)	1,127 (9.3%)	5173 (9.3%)
Citations from all other journals	2860 (77.8%)	5774 (83.8%)	15,428 (89.4%)	8280 (93.2%)	5251 (76.7%)	9,639 (80.0%)	47,232 (85%)
Total number of article citations	3675 (100%)	6887 (100%)	17,250 (100%)	8,886 (100%)	6848 (100%)	12,050 (100%)	55,596 (100%)

Research Question 2: What is the mean cross-citation rate for the school psychology journals?

When analyzed collectively, 9.3% of all citations from 1995-2004 in the six school psychology journals were cross-citations. *SPQ* was the journal whose authors most frequently cited (17.0%) publications from the other school psychology journals in their reference lists. Conversely, *SPI* was the journal whose authors most infrequently cited (4.8%) publications from the other school psychology journal outlets. The frequency of cross-citation practices in all other school psychology journal ranged from 7.3% to 12.4%.

Table 3-5 illustrates cross-citation practices across the six journals. The matrix demonstrates three significant findings. First, *SPI* is consistently the most infrequently cross-cited journal, followed by *JPA*, whereas *SPR* is the most commonly cross-cited publication outlet by the school psychology journals. Second, *PITS* and *SPQ* are unique in that the authors from each journal more frequently source publications from *SPR* than they cite articles from their own respective outlets. Third, *JSP* and *PITS* maintain the most consistent rank-order positions as the third and fourth most frequently cross-referenced journals.

Table 3-5

Cross-Citation Matrix

Journal Name	JPA	JSP	PITS	SPI	SPQ	SPR
Rank Order and Raw Number	1. JPA (361) 2. SPR (131) 3. JSP (121) 4. PITS (119) 5. SPQ (65) 6. SPI (18)	1. JSP (373) 2. SPR (359) 3. SPQ (158) 4. PITS (116) 5. JPA (88) 6. SPI (19)	1. SPR (611) 2. PITS (556) 3. JSP (265) 4. JPA (189) 5. SPQ (139) 6. SPI (62)	1. SPI (183) 2. SPR (166) 3. JSP (97) 4. PITS (86) 5. JPA (42) 6. SPQ (32)	1. SPR (568) 2. SPQ (434) 3. JSP (315) 4. PITS (146) 5. JPA (111) 6. SPI (23)	1. SPR (1,284) 2. SPQ (395) 3. JSP (373) 4. PITS (206) 5. JPA (116) 6. SPI (31)
Total number of cross citations	454	740	1266	423	1163	1127

Research Question 3: What is the frequency and percent of article citations that were not determined to be self or cross citations?

Article citations from outlets that do not maintain a school psychology focus, by far, represented the largest percent of article publications in the study. Eighty-five percent of all article citations across the six school psychology journals were neither self nor cross-citations. The relative frequency of citations from outside school psychology varied for the six school psychology journals, as evidenced in Table 3-6. *SPI* demonstrated the greatest influence of article outlets outside the area of school psychology, while *SPQ* demonstrated the least influence of such journals.

Research Question 4: What journals were the most frequently cited across the major school psychology journals from 1995-2004?

Tables 3-7 through 3-12 list the ten most frequently referenced journals in *JPA, JSP, PITS, SPI, SPQ,* and *SPQ,* respectively, from 1995-2004. Table 3-13 displays the twenty most frequently cited journals when all school psychology journals were analyzed collectively across the 10-year period.

When citations from all major school psychology journals are analyzed collectively, findings indicate that all six journals with a school psychology focus except *SPI,* are among the 20 most cited journals. In fact, four of the six school psychology outlets maintained a position within the six highest ranked journals. The most influential non-school psychology journals were the *Journal of Applied Behavior Analysis, Child Development,* and the *American Psychologist.*

Table 3-7

The Ten Most Frequently Cited Journals in *JPA*

Journal Name	Frequency	Rank	Percentage
1. Journal of Psychoeducational Assessment	361	1	9.8%
2. School Psychology Review	131	2	3.6%
3. Journal of Consulting and Clinical Psychology	125	3	3.4%
4. Psychological Assessment	123	4	3.3%
5. Journal of School Psychology	121	5	3.3%
6. Psychology in the Schools	119	6	3.2%
7. Journal of Learning Disabilities	105	7	2.9%
8. Journal of Clinical Psychology	100	8	2.7%
9. Journal of Educational Psychology	65	9	1.8%
10. School Psychology Quarterly	65	10	1.8%

Table 3-8

The Ten Most Frequently Cited Journals in *JSP*

Journal Name	Frequency	Rank	Percentage
1. Child Development	435	1	6.3%
2. Journal of School Psychology	373	2	5.4%
3. School Psychology Review	359	3	5.2%
4. American Psychologist	198	4	2.9%
5. School Psychology Quarterly	158	5	2.3%
6. Journal of Consulting and Clinical Psychology	156	6	2.3%
7. Journal of Educational Psychology	150	7	2.2%
8. Psychological Bulletin	146	8	2.1%
9. Psychology in the Schools	116	9	1.7%
10. Journal of Clinical Child Psychology	110	10	1.6%

Table 3-9

The Ten Most Frequently Cited Journals in *PITS*

Journal Name	Frequency	Rank	Percentage
1. School Psychology Review	611	1	3.5%
2. Psychology in the Schools	556	2	3.2%
3. American Psychologist	271	3	1.6%
4. Child Development	260	4	1.5%
5. Journal of School Psychology	265	5	1.5%
6. Journal of Applied Behavior Analysis	217	6	1.3%
7. Journal of Educational Psychology	203	7	1.2%
8. Journal of Consulting and Clinical Psychology	201	8	1.2%
9. Journal of the Am. Academy of Child Psychology	198	9	1.1%
10. Journal of Psychoeducational Assessment	189	10	1.1%

Table 3-10

The Ten Most Frequently Cited Journals in *SPI*

Journal Name	Frequency	Rank	Percentage
1. School Psychology International	183	1	2.1%
2. School Psychology Review	166	2	1.9%
3. Child Development	116	3	1.3%
4. Journal of Educational Psychology	106	4	1.2%
5. American Psychologist	98	5	1.1%
6. Journal of School Psychology	97	6	1.1%
7. Education Psychology Practice	94	7	1.1%
8. Psychology in the Schools	86	8	1.0%
9. Journal of Personality and Social Psychology	76	9	0.8%
10. British Journal of Educational Psychology	70	10	0.8%

Table 3-11

The Ten Most Frequently Cited Journals in *SPQ*

Journal Name	Frequency	Rank	Percentage
1. School Psychology Review	568	1	8.3%
2. Journal of Applied Behavior Analysis	481	2	7.0%
3. School Psychology Quarterly	434	3	6.3%
4. Journal of School Psychology	315	4	4.6%
5. American Psychologist	216	5	3.2%
6. Psychology in the Schools	146	6	2.1%
7. Journal of Consulting and Clinical Psychology	121	7	1.8%
8. Exceptional Children	117	8	1.7%
9. Journal of Psychoeducational Assessment	111	9	1.6%
10. Journal of Educational Psychology	110	10	1.6%

Table 3-12

The Ten Most Frequently Cited Journals in *SPR*

Journal Name	Frequency	Rank	Percentage
1. School Psychology Review	1284	1	10.7%
2. Journal of Applied Behavior Analysis	508	2	4.2%
3. School Psychology Quarterly	395	3	3.3%
4. Journal of School Psychology	373	4	3.1%
5. American Psychologist	352	5	2.9%
6. Exceptional Children	290	6	2.4%
7. Journal of Educational Psychology	279	7	2.3%
8. Child Development	273	8	2.3%
9. Psychology in the Schools	206	9	1.7%
10. Journal of Consulting and Clinical Psychology	205	10	1.7%

Table 3-13

The Twenty Most Frequently Cited Journals in the Major School Psychology Journals

Journal Name	Frequency	Rank
1. School Psychology Review	3118	1
2. Journal of School Psychology	1517	2
3. Journal of Applied Behavior Analysis	1278	3
4. Child Development	1254	4
5. Psychology in the Schools	1231	5
6. School Psychology Quarterly	1223	6
7. American Psychologist	1118	7
8. Journal of Educational Psychology	919	8
9. Journal of Consulting and Clinical Psychology	845	9
10. Psychological Bulletin	777	10
11. Exceptional Child	717	11
12. Developmental Psychology	655	12

Table 3-13 - Continued

Journal Name	Frequency	Rank
13. Journal of Learning Disabilities	608	13
14. Journal of the Am Academy of Child Psychology	603	14
15. Journal of Psychoeducational Assessment	594	15
16. Journal of Abnormal Child Psychology	516	16
17. Journal of Clinical Child Psychology	489	17
18. Journal of Special Education	409	18
19. Journal of Personality and Social Psychology	386	19
20. Developmental Psychopathology	353	20

Research Question 5: What percent of citations were from journals with a behavior analytic focus?

Table 3-14 illustrates the number of citations derived from each behavior analytic source. Overall, 4.3% of the 55,596 journal articles citations in the study referenced a behavioral analytic journal. The most significant behavior analytic contributor was the *Journal of Applied Behavior Analysis* (*JABA).* During the 10-year span, school psychologist authors cited *JABA* more than any of the other behavioral analytic outlets combined.

Table 3-14

Journals with a Behavior Analytic Focus

Journal Name	Frequency	Rank
Journal of Applied Behavior Analysis	1286	1
Behavior Therapy	220	2
Education and Treatment of Children	188	3
Behavior Modification	161	4
Journal of Behavioral Education	147	5
Behavior Research and Therapy	89	6
Child and Family Behavior Therapy	81	7
Journal of Behavior Therapy and Exp. Psychiatry	67	8
Journal of the Experimental Analysis of Behavior	43	9
Journal of Psychopathology and Behavioral Assessment	41	10
Behavior Analyst	29	11
Proven Practice: Prevention and Remediation Solutions for Schools	23	12
Journal of Organizational Behavior Management	17	13
Behavior Change	16	14
Psychological Record	14	15
Quarterly Journal of Experimental Psychology	8	16
Behavior Interventions	7	17
Behavioral and Brain Sciences	7	17
Cognitive and Behavioral Practices	6	18
Experimental and Clinical Psychopharmacology	4	19
Applied Psychophysiology and Biofeedback	2	20
Positive Behavioral Interventions for Supporting Children with SED	1	21
Learning and Motivation	1	21
Behavioural Processes	1	21
Animal Learning and Behavior	1	21
Total Citations from Behavior Analytic Focus	2460	

Research Question 6: What percent of citations originate from journals with an education focus?

Authors from the major school psychology journals referenced publications from education journals at a rate of 4.8% over the 10-year period (Table 3-15). *American Educational Research Journal* and the *Review of Educational Research* were the two most frequently cited education journals with 343 and 316 articles sourced, respectively. Journals targeting the education of early childhood and elementary age populations were referenced more frequently than journals targeting secondary and higher education populations.

A final, but salient, pattern observed with respect to the education journals was the diversity of the journal outlets. The education database included a myriad of international journals; journals targeting the education of minority and community populations; journals addressing measurement, leadership, and content issues in education; and journals targeting effective school policies, reform, and legislation. The diversity of the education journals sometimes created difficulties in coding when the investigator delineated educational from non-educational outlets. It also contributed to the inclusion of many infrequently referenced education journals into the analysis.

Research Question 7: What percent of citations originate from journals with a special education focus?

Findings indicate that special education outlets have been more influential among the six school psychology journals than behavior analytic or education journals. Table 3-15 indicates that nearly 7% of all journal article citations referenced special education

outlets. Special education articles from the following outlets appear to have most heavily impacted the school psychology journals: 1) *Exceptional Child*, 2) *Journal of Learning Disabilities*, 3) *Journal of Special Education*, 4) *Remedial Special Education*, and 5) *Behavior Disorders*.

Table 3-15

Citation Relationships with Related Areas

Journal Type	Frequency	Percentage
Behavior Analytic Journals	2381	4.3%
Education Journals	2660	4.8%
Special Education Journals	3803	6.8%
School Psychology Journals	8364	15%
Journals that lack a specific emphasis in behavior analysis, education, special education, or school psychology	38,388	69.0%
Total	55,596	100%

Research Question 8: Which books were the most frequency cited?

When citations for the six journals were analyzed collectively (Table 3-22), *Best Practices in School Psychology III* (Thomas, 1995) and the *Handbook of School Psychology III* (Reynolds, 1999) were the most widely referenced books, followed by *Contemporary Intellectual Assessment: Theories, Tests, and Issues* (Flanagan, 1997) and the *Diagnostic and Statistical Manual of Mental Disorders IV* (American Psychiatric Association, 1994). Aside from the different editions of the *Wechsler Intelligence Scale for Children* and the *Diagnostic and Statistical Manual of Mental Disorders IV*, Gresham's *Social Skills Rating System* (1990) emerged as the only assessment instrument or tool ranking within the top twenty most referenced books.

Tables 3-16 through 3-21 show results for individual journals. Authors have robustly referenced *Best Practices in School Psychology III* (Reynolds, 1999), and the *Handbook of School Psychology II* (Gutkin, 1990), and *Wechsler Intelligence Scale for Children III* (Wechsler, 1991) in 5 of 6, and 4 of 6, major school psychology journal outlets, respectively. *Contemporary Intellectual Assessment: Theories, Tests, and Issues* (Flanagan, 1997) and the *Diagnostic and Statistical Manual of Mental disorders IV (*American Psychiatric Association, 1994) appear in the most frequently cited book lists in 3 of 6 journals.

Ten additional titles appear in two of the most frequently cited book lists, whereas all other books appear only once as a most frequently cited book in an individual journal. The number of non-overlapping titles across the 10 most popularly cited tables speaks to the diversity of school psychology literature. This diversity is especially revealing with regard to *SPI.* Eight of the 10 most frequently cited texts in *SPI* are not among the most frequently referenced works in any of the other school psychology journals. Interestingly, half of the books most frequently cited in *SPI* (5 of 10) specifically name bullying within their title, thereby suggesting greater intra-journal content similarity and influence among the *SPI* citations.

Table 3-16

The Most Frequently Cited Books in *JPA*

Book Name	First Author/ Editor	Year	Frequency	Rank
1. The Wechsler Intelligence Scale for Children III	Wechsler, D	1991	47	1
2. Differential Ability	Elliott, C.D.	1990	28	2
3. The Wechsler Intelligence Scale for Children-Revised	Wechsler, D	1974	26	3
4. Diagnostic and statistical manual of mental disorders (4th ed.).	American Psychiatric Association	1994	23	4
5. Intelligent Testing with the WISC-III	Kaufman, A.S.	1994	25	5
6. Assessment of Children Revised III	Sattler, J.M.	1992	20	6
7. Handbook of Psychological and Educational Assessment of Children: Intelligence and Achievement	Reynolds, C.R.	1990	20	7
8. Social Skills Rating System	Gresham, F.M	1990	17	8
9. Assessing Adolescent and Adult Intelligence	Kaufman, A.S.	1990	19	9
10. Statistical Power Analysis for the Behavioral Analysis – 2nd Edition	Cohen, J.	1988	16	10

Table 3-17

The Most Frequently Cited Books in *JSP*

Book Name	First Author/ Editor	Year	Frequency	Rank
1. Peer Rejection in Childhood	Asher, S.R.	1990	25	1
2. Handbook of Consultation Services for Children: Application in Educational and Clinical Settings	Zins, J.E.	1993	24	2
3. Handbook of School Psychology II	Gutkin, T.B.	1990	24	2
4. Handbook of School Psychology III	Reynolds, C.R.	1999	23	3
5. Handbook of Child Psychology – 5th edition	Damon, W.	1998	23	3
6. Flunking Grades: Research and Policies on Retention	Shepard, L.A.	1989	19	4
7. School Psychology: A Social Psychological Perspective	Medway, F.J.	1992	15	5
8. Best Practices in School Psychology III	Thomas, A	1995	15	5
9. Diagnostic and Statistical Manual of Mental disorders IV	American Psychiatric Association	1994	15	5
10. The Wechsler Intelligence Scale for Children III	Wechsler, D	1991	14	6

Table 3-18

The Most Frequently Cited Books in *PITS*

Book Name	First Author/ Editor	Year	Frequency	Rank
1. Best Practices in School Psychology III	Thomas, A	1995	58	1
2. Best Practices in School Psychology IV	Thomas, A.	2002	33	2
3. The Wechsler Intelligence Scale for Children III	Wechsler, D	1991	30	3
4. Handbook of School Psychology III	Reynolds, C.R.	1999	26	4
5. Flunking Grades: Research and Policies on Retention	Shepard, L.A.	1989	25	5
6. Social Skills Rating System	Gresham, F.M	1990	21	6
7. Statistical Power Analysis for the Behavioral Sciences	Cohen, J.	1988	19	7
8. Assessment of Children Revised III	Sattler, J.M.	1992	17	8
9. Behavior Assessment System for Children	Reynolds, C.R.	1992	16	9
10. Contemporary Intellectual Assessment: Theories, Tests, and Issues	Flanagan, D.P.	1997	16	9
Early Warning, Timely Response: A Guide to Safe Schools.	Dwyer, K.	1998		
Psychological Testing 6th Edition	Anastasi, A.	1998		
School Readiness Assessment and Educational Issues	Gredler, G.R.	1992		
The Wechsler Intelligence Scale for Children-Revised	Wechsler, D	1974		

Table 3-19

The Most Frequently Cited Books in *SPI*

Book Name	First Author/ Editor	Year	Frequency	Rank
1. Best Practices in School Psychology III	Thomas, A	1995	26	1
2. International Perspectives in Psychology in the Schools	Oakland, T.	1989	23	2
3. School Bullying: Insights and Perspectives	Smith, P.K.	1994	21	3
4. Bullying at School What We Know and What We Can Do	Olweus, D.	1993	19	4
5. Handbook of School Psychology II	Gutkin, T.B.	1990	23	5
6. Dynamic Assessment: An Interactional Approach to Evaluating Learning Potential	Lidz, C.S.	1987	15	6
7. Bullies and Victims in Schools	Besag, V.E.	1989	13	7
8. Bullying in Schools	Tattum, D.P.	1989	13	7
9. Developmental Treatment of Childhood Aggression	Pepler, D.	1991	13	7
10. Aggression School Bully	Olweus, D.	1978	13	7

Table 3-20

The Most Frequently Cited Books in *SPQ*

Book Name	First Author/ Editor	Year	Frequency	Rank
1. Best Practices in School Psychology III	Thomas, A	1995	59	1
2. Handbook of School Psychology II	Gutkin, T.B.	1990	36	2
3. Handbook of Consultation Services for Children: Application in Educational and Clinical Setting	Zins, J.E	1993	32	3
4. Contemporary Intellectual Assessment: Theories, Tests, and Issues	Flanagan, D.P.	1997	27	4
5. Interventions for Achievement and Behavior Problems	Stoner, G.	1991	24	5
6. Single Case Research Design and Analysis	Kratochwill, T.R.	1992	23	6
7. Behavioral Consultation and Therapy	Bergan, J.R.	1990	21	7
8. Home School Collaboration: Enhancing Children's Academic and Social Competence	Christenson, S.L.	1992	19	8
9. Intelligent Testing with the WISC-III	Kaufman, A.S.	1994	19	8
10. The Wechsler Intelligence Scale for Children III	Wechsler, D	1991	19	8

Table 3-21

The Most Frequently Cited Books in *SPR*

Book Name	First Author/ Editor	Year	Frequency	Rank
1. Best Practices in School Psychology III	Thomas, A	1995	120	1
2. Handbook of School Psychology III	Reynolds, C.R.	1999	67	2
3. Contemporary Intellectual Assessment: Theories, Tests, and Issues	Flanagan, D.P.	1997	59	3
4. Diagnostic and Statistical Manual of Mental disorders IV	American Psychiatric Association	1994	41	4
5. Curriculum Based Measurement: Assessing Special Children	Shinn, M	1989	32	5
6. Alternative educational delivery systems	Graden, J.L.	1988	30	6
7. Handbook of School Psychology II	Gutkin, T.B.	1990	30	6
8. Home School Collaboration: Enhancing Children's Academic and Social Competence	Christenson, S.L.	1992	30	6
9. Best Practices in School Psychology IV	Thomas, A.	2002	29	7
10. School Psychology: A Blueprint for Training and Practice	Ysseldyke, J.	1997	28	8

Table 3-22

The Most Frequently Cited Books in the Major School Psychology Journals

Book Name	First Author/ Editor	Year	Frequency	Rank
1. Best Practices in School Psychology III	Thomas, A	1995	298	1
2. Handbook of School Psychology III	Reynolds, C.R.	1999	159	2
3. Contemporary Intellectual Assessment: Theories, Tests, and Issues	Flanagan, D.P.	1997	154	3
4. Diagnostic and Statistical Manual of Mental Disorders IV	American Psychiatric Association	1994	140	4
5. The Wechsler Intelligence Scale for Children III	Wechsler, D	1991	132	5
6. Handbook of School Psychology II	Gutkin, T.B.	1990	125	6
7. Social Skills Rating System	Gresham, F.M	1990	94	7
8. Assessment of Children Revised III	Sattler, J.M.	1992	83	8
9.. The Wechsler Intelligence Scale for Children-Revised	Wechsler, D	1974	78	9
10. Statistical Power Analysis for the Behavioral Sciences	Cohen, J.	1988	73	10

Research Question 9: Which first authors/editors were the most frequency cited?

Tables 3-23 through 3-29 demonstrate the impact of individual authors on the individual school psychology journals and on the field of school psychology in general. Overall, articles in school psychology most frequently referenced A.S. Kaufman and D. Weschler, followed by F.M. Gresham, D.J. Reschly, and L.S. Fuchs.

A disproportionate number of the most influential authors were men. When all school psychology citations from the 10-year-period were analyzed collectively, only 4 of the 40 most frequently referenced first authors were women: Lynn Fuchs, Susan Sheridan, Sandra Christenson, and Susan Harter. When citations were analyzed by individual school psychology journal, 14 of the 125 most frequently cited first authors/editors in Tables 3-23 through 3-28 were female authors or editors.

The American Psychiatric Association was the most influential group author contributing to the citation pool. The United States Department of Education and the National Association of School Psychologist have also heavily impacted the literature, particularly with regard to SPR and PITS, respectively.

While the exact content and particular manner in which a publication has influenced the literature cannot be determined by simple citation counts alone, the most frequently cited authors in *SPR* do suggest that direct assessment methods, such as Curriculum Based Measurement, have strongly influenced publication in that journal. Four of the nine top-ranked authors (L. S. Fuch, M. R. Shinn, E. S. Shapiro, and S .L. Deno) in SPR have written extensively in the area of Curriculum Based Measurements (CBM) and student progress monitoring. Interestingly, the continued impact of curriculum based measurement does not appear to be pervasive across the majority of the school psychology journal outlets. For example, neither L.S. Fuch, M.R. Shinn, E.S. Shapiro, nor S.L.Deno appear as a most frequently referenced author in *JPA, JSP, PITS,* nor *SPI. School Psychology Quarterly*, on the other hand, does appear to be more influenced by the CBM literature than *JPA, JSP, PITS,* and *SPI.* In *SPQ*, the major

contributors in the area of direct assessment, namely CBM, are E.S. Shapiro, J.C. Witt, B.K. Martens, and L.S. Fuchs.

Table 3-23

The Twenty Most Frequently Cited First Authors in *JPA* from 1995-2004

First Author/ Editor Name	Frequency	Rank
1. Kaufman, A.S.	180	1
2. Weschler, D.	169	2
3. Naglieri, J.A.	85	3
4. Bracken, B.A.	83	4
5. Achenbach, T.M	71	5
6. Reynolds, C.R	68	6
7. Sattler, J.M.	68	6
8. Merrell, K.W.	65	7
9. McDermott, P.A.	58	8
10. Woodcock, R.W.	58	8
11. American Psychiatric Association	49	9
12. Barkley, R.A.	42	10
13. Ryan, J.J.	41	11
14. Anastasi, A.	40	12
15. Keith, T.Z.	40	12
16. McGrew, K.S.	39	13
17. Silverstein, M.	39	13
18. Horn, J.L.	37	14
19. Elliott, C.D.	37	14
20. Thorndike, R.L.	36	15
Total	1305	18.7%

Table 3-24

The Twenty Most Frequently Cited First Authors in *JSP* from 1995-2004

First Author/ Editor Name	Frequency	Rank
1. Pianta, R.C.	77	1
2. Gutkin, T.B.	65	2
3. Kazdin, A.E.	65	2
4. Hughes, J.N.	63	3
5. Reynolds, A.J.	60	4
6. Erchul, W.P.	59	5
7. Achenbach, T.M.	57	6
8. American Psychiatric Association	56	7
9. Weschler, D.	55	8
10. Coie, JD	53	9
11. Rutter, M.	47	10
12. Woodcock, R.W.	47	10
13. Gresham, F.M.	46	11
14. Kratochwill, T.R.	42	12
15. Ladd, G.W.	41	13
16. Saigh, P.A.	40	14
17. Kaufman, A.S.	40	14
18. Sternberg, R.J.	38	15
19. Cairns, R.B.	37	16
20. Dodge, K.A.	37	16
Total	1025	9.2%

Table 3-25

The Twenty Most Frequently Cited First Authors in *PITS* from 1995-2004

First Author/ Editor Name	Frequency	Rank
1. American Psychiatric Association	107	1
2. Kaufman, A.S.	101	2
3. Weschler, D.	94	3
4. Achenbach, T.M	82	4
5. Gresham, F.M.	81	5
6. Merrell, K.W.	77	6
7. Walker, H.M.	76	7
8. McDermott, P.A.	69	8
9. Kazdin, A.E.	68	9
10. Reschly, D.J.	67	10
11. Woodcock, R.W.	65	11
12. Barkley, R.A.	63	12
13. Reynolds, C.R	54	13
14. Bracken, B.A	52	14
15. Shepard, L.A.	51	15
16. Furlong, M.J.	50	16
17. Fagan, T.K.	48	17
18. Sattler, J.M.	45	18
19. National Association of School Psychologists	44	19
20. Harter, S.	44	20
Total	1338	7.8%

Table 3-26

The Twenty Most Frequently Cited First Authors in *SPI* from 1995-2004

First Author/ Editor Name	Frequency	Rank
1. Olweus, D.	70	1
2. Marsh, H.W.	52	2
3. Feuerstein R.	45	3
4. Vygotsky, L.S.	44	4
5. Huebner ES	35	5
6. Smith, P.K	34	6
7. Rigby, K.	32	7
8. Burden, R.L.	31	8
9. Kingery, P.M.	31	8
10. Oakland, T.D.	30	9
11. American Psychiatric Association	29	10
12. Tzuriel, D.	28	11
13. Fagan, T.K.	26	12
14. Das, J.P.	24	13
15. Bracken, B.	23	14
16. Harter, S.	23	14
17. Gutkin, T.B.	23	14
18. Kozulin, A.	22	15
19. Rutter, M.	22	15
20. Farrell, P. Kaufman, A.S. Lidz, C.S. Reynolds, C.R.	21	16
Total	708	8.0%

Table 3-27

The Twenty Most Frequently Cited First Authors in *SPQ* from 1995-2004

First Author/ Editor Name	Frequency	Rank
1. Kratochwill, T.R.	136	1
2. Witt, J.C.	99	2
3. Kazdin, A.E.	98	3
4. Gresham, F.M.	96	4
5. Sheridan, S.M.	89	5
6. Gutkin, T.B.	70	6
7. Kaufman, A.S.	69	7
8. Martens, B.K.	68	8
9. Reschly, D.J.	67	9
10. Wechsler, D.	64	10
11. Keith, T.Z.	62	11
12. Bergan, J.R.	61	12
13. Elliott, S.N.	56	13
14. Shapiro, E.S.	56	14
15. Fuchs, L.S.	52	15
16. American Psychiatric Association	49	16
17. Skinner, C.H.	46	17
19. Greenwood, C.R.	43	18
20. Huebner, E.S.	43	18
18. Christenson, S.L. Jensen, A.R. Erchul, W.P	42	19
Total	1450	13.5%

Table 3-28

The Twenty Most Frequently Cited First Authors in *SPR* from 1995-2004

First Author/ Editor Name	Frequency	Rank
1. Fuchs, L.S.	214	1
2. American Psychiatric Association	184	2
3. Reschly, D.J.	164	3
4. Gresham, F.M.	159	4
5. Shinn, M.R.	133	5
6. Ysseldyke, JE	92	6
7. Kratochwill, T.R.	90	7
8. Shapiro, E.S.	90	7
9. Deno, S.L.	87	9
10. Sheridan, S.M.	86	8
11. Fagan, T.K.	80	9
12. Lambert, N.M.	80	9
13. Achenbach, T.M.	78	10
14. Kazdin, A.E.	77	11
15. Walker, H.M.	73	12
16. Nastasi, B.K.	71	13
17. Christenson, S.L.	69	14
18. Witt, J.C.	69	14
19. Elliott, S.N.	68	15
20. U.S. Department of Education	66	16
Total	2030	10.3%

Table 3-29

The Forty Most Frequently Cited First Authors
in the Major School Psychology Journals from 1995-2004

First Author/ Editor Name	Frequency	Rank
1. Kaufman, A.S.	457	1
2. Weschler, D.	454	2
3. Gresham, F.M	425	3
4. Reschly, D.J.	364	4
5. Fuchs, L.S.	330	5
6. Achenbach, T.M	323	6
7. Kazdin, A.E.	319	7
8. Kratochwill, T.R.	280	8
9. McDermott, P.A.	268	9
10. Reynolds, C.R	253	10
11. Sheridan, S.M.	240	11
12. Woodcock, R.W.	235	12
13. Gutkin, T.B.	234	13
14. Shinn, M.R.	234	13
15. Witt, J.C.	224	14
16. American Psychiatric Association	218	15
17. Shapiro, E.S.	208	16
18. Naglieri, J.A.	206	17
19. Bracken, B.A.	205	18
20. Cohen, J.	198	19
21. Fagan, T.K.	182	20
22. Barkley, R.A.	178	21
23. Elliott, S.N.	177	22
24. Keith, T.Z.	176	23
25. Sattler, J.M.	174	24
26. Pianta, R.C.	166	25
27. Walker, H.M.	165	26

Table 3-29 - Continued

First Author/ Editor Name	Frequency	Rank
28. Merrell, K.W.	163	27
29. McGrew, K.S.	161	28
30. Martens, B.K.	157	29
31. Huebner, E.S.	154	30
32. Olweus, D.	152	31
33. Christenson, S.L.	150	32
34. Rutter, M.	150	32
35. Deno, S.L.	146	33
36. Bergan, J.	145	34
37. Skinner, C.H.	143	35
38. Harter, S.	142	36
39. DuPaul, G.J.	141	37
40. Marsh, H.W.	137	38
Total	8824	11.8% of all citations

Research Question 10: Which school psychology journal appeared to have the greatest impact independent of journal size?

SPR maintains the highest citation per publication average (Table 3-30) for publications from 1995-2004, and therefore appears to be the most influential school psychology journal. *SPQ* is second in terms of impact, as determined by the citation per publication formula, although *SPQ* had the lowest number of publications during the 10-year period. *SPI* and *JPA* maintained the lowest citation per publication average, and are therefore appear to be the least influential journals.

The dynamic nature of the formula used to calculate impact, as compared to the static nature of the data presented in Research Questions 1-8, is worth noting. As publications for the six outlets continue to be referenced in newly released literature, the

impact size for each of the six school psychology journals can potentially increase or diminish, and thus change the degree of influence of a particular publication outlet.

Table 3-30

Impact Size of the School Psychology Journals

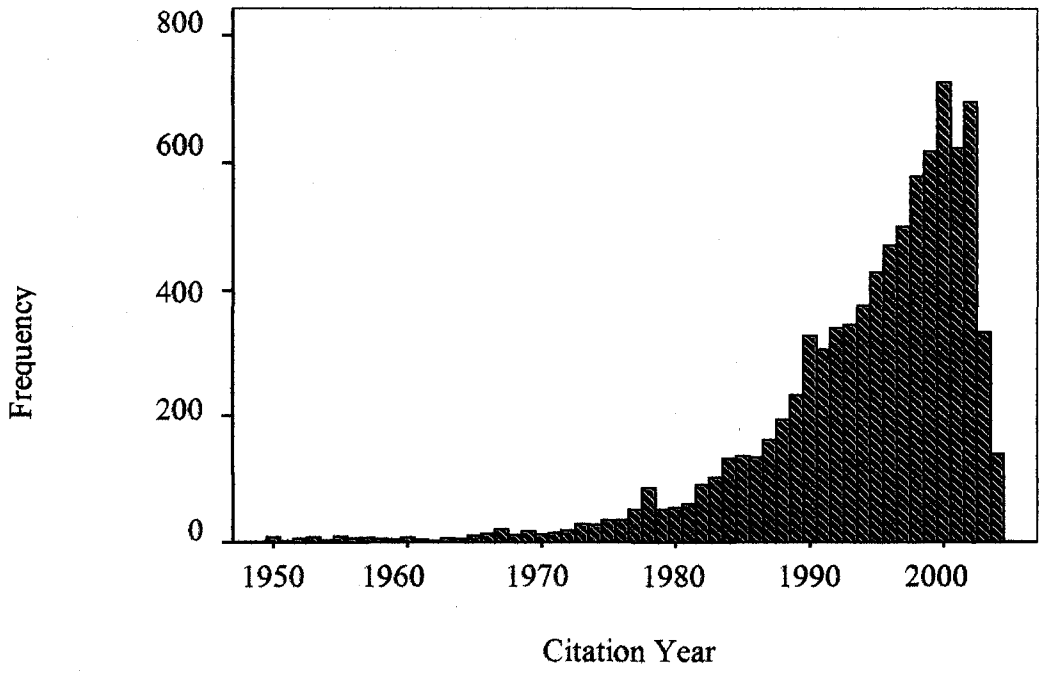
Journal	JPA	JSP	PITS	SPI	SPQ	SPR
Number of Publications	348	297	606	347	277	495
Sum of Times Cited	1004	1951	1794	682	2068	3714
Average Citation Per Publication	2.89	6.57	2.96	1.97	7.47	7.50

Research Question 11: To what extent are school psychology authors influenced by relatively new literature, as compared to older publications?

Results suggest that school psychology authors are reliant on relatively new publications. When analyzing all citations from the six journals in 2004, the most frequently referenced year (i.e., mode) was 2000. with the median and mean values being 1996 and 1993, respectively. The mean value, however, was significantly skewed due to the range of cited works. The oldest referenced work in 2004 was 145 years old (i.e., publication date: 1859), whereas the most recently referenced publication was not even a year old (i.e. publication date of 2004). Figure 3-1 delineates the age dispersion (1950-2004) of the publications referenced in 2004. Publications prior to 1950 where not included in the graph due to their minimal impact on the distribution.

Figure 3-1

Citation Distribution in 2004:
All School Psychology Journals



CHAPTER IV

DISCUSSION

The current study served as an extension of the bibliometric citation investigations of Kawano et al (1993), Frisby (1998), and Kwak (2002). It has furthered the literature by examining six school psychology journal outlets over a 10-year period while utilizing a web-based version of the SSCI. The web based SSCI proved to be beneficial by eliminating the labor intensive copying, scanning, and tabbing required to construct a data set. It also removed the need to hand count the SSCI reports.

By eliminating such procedures in favor of an independent data bank, the overall citation pool was found to be highly consistent with the actual references when subjected to random reliability checks. The independent nature of the data ensures the possibility of replication studies if results and analyses are challenged in any manner. Finally, although the use of an independent data set is purported to lessen procedural error, the present study is susceptible to any and all error associated with citation analyses research on a conceptual level. The theoretical limitations of citation analysis are adequately documented in both the school psychology and the library and information science literature (Garfield, 1979; Kwak, 2002; Smith, 1981).

Research Questions

Trends in Self-Citation Rates

Self-citation patterns in school psychology have been examined using citation analysis procedures in three previous investigations. The current findings are consistent

with those reported by Kawano et al. (1993), Frisby (1998), and Kwak (2002) in that the percent of self-citations was generally low across the school psychology journal outlets, particularly when compared to other subspecialties in psychology wherein self-citation rates can range as high as 78.9% (Carr & Stewart, 2005). Although school psychology journal article publications were characterized by low self-citation rates, overall, a significant growth was noted in the percent of self-citations in *SPR*. Table 4-1 demonstrates the growth across time in *SPR*; it illustrates that a substantial increase in self-citations occurred between 2000 and 2004, despite fairly stable citation per year averages. In addition to the increase in *SPR* self-citation rates, the current findings suggest that *JPA,* like *SPR*, is differentiated by slightly higher self-citation rates than the other school psychology journal outlets.

Table 4-1

School Psychology Review Self-Citation Trends

Publication	Year(s) of interest	Total number of citations	Average citations per year	% of self-citations
Kawano et al.	1985	1,818	(N/A)	4%
Frisby	1990-1994	11,081	(2216)	4.6%
Kwak	1994-1999	10,915	(2183)	4.88%
Current Study	1994-2004	19,649	(1965)	10.7%

School Psychology Insularity

The extent to which authors in school psychology utilize and recognize existing school psychology literature has been of interest in determining the degree to which school psychology is an insular discipline. In the current investigation, self-citation and cross-citation rates jointly determined patterns of insularity. *SPQ* and *JPA* were found to

be the most insular of the school psychology outlets with 23.3% and 22.2% of the citations, respectively, originating from a school psychology outlet. Conversely, *SPI* (6.8%) and *PITS* (10.6%) were the outlets that most frequently referenced disciplines outside of school psychology. Kwak (2002), likewise, found *SPQ* and *SPI* to be the most and least insular journal outlets, respectively, despite using slightly different procedures than those used in the present study.

Kwak also found that authors in school psychology were more reliant on *SPR* with respect to cross-citation practices than any other journal in school psychology. However, additional research on cross-citation rates will be necessary to reveal longitudinal patterns because this area has been under-evaluated in the field of school psychology.

School Psychology Collaboration

The collaborative nature of school psychology publications is well documented in the literature. The collaboration historically occurs in multiple forms, and is evident in authorship trends, journal outlets, and citation patterns. Recently, Davis et al. (2005) reported that 19 of the 20 most prolific school psychology authors from 1991-2003 averaged more than two authors per article. Carper and Williams' (2004) findings illustrate that 70% of journal publications from APA accredited school psychology program faculty were printed in journals other than *JSP, PITS, SPI, SPQ*, and *SPR*. Kwak (2002) and the current investigation provide further credence that high levels of collaboration remain, as authors referenced non-school psychology articles, on average, 90% (Kwak, 2002) and 85% (current study) of the time.

Three areas of interdisciplinary collaboration were of particular interest within the current investigation: special education, general education, and behavior analysis. Frisby (1998) similarly addressed the role of special education and education. He purported that school psychology "functions as a bridge between two broad disciplines of psychology and special education," as opposed to a bridge linking psychology and education (p. 314). Frisby's remarks were supported in the present findings wherein the impact of special education on school psychology was determined. Findings suggest that special education has a larger impact on school psychology than does the field of education. This conclusion appears to be particularly compelling given that education journals were procedurally defined in the broadest sense of the term. Nevertheless, in order to substantiate Frisby's notion, additional studies will be required to determine the impact of school psychology on special education.

The impact of behavior analysis on the school psychology literature has special appeal to the investigator who is a school psychologist practitioner trained from a behavioral orientation. Other contemporary authors have addressed this same question. Davis et al. (2005) found that 13 of the 20 most prolific school psychology authors self-reported a behavioral and/or cognitive-behavioral orientation. Kwak's (2002) findings suggest that, on average, 2.69% of citations originated from journals with a behavior analytic focus.

In the current study, the pool of behavioral analytic journals was expanded to incorporate those outlets examined by Kwak (2002), Carr and Britton (2003), and Carr and Stewart (2005). More inclusive procedures yielded an average of 4.4% of references from behavioral journals from 1995-2004. While this percentage gives the appearance of

minimal impact, the percentage is significant and must be viewed relative to the impact of the school psychology outlets on the school psychology literature. Table 3-15 depicts that 15% of all citations originate from school psychology outlets. Thus, the behavioral outlets provide 1/3 the impact on school psychology that school psychology outlets provide on their own discipline.

To value fully the effect of behavior analysis on school psychology, the influence of *JABA* in school psychology requires further discussion. *JABA* maintained its position as the single, most influential behavioral outlet, contributing over half (i.e., 52%) of all behavioral article citations in school psychology. *JABA* ranked as the second most frequently referenced journal in *SPQ* and *SPR* (Tables 3-11 and 3-12), and the sixth most frequently cited journal in *PITS* (Table 3-9) when citations from school psychology and non-school psychology outlets were analyzed collectively.

The Most Frequently Cited Books

The most widely referenced book lists have practical applications for pre-service school psychologists, practitioners, and school psychology researchers and faculty. Clearly, these texts should be in the possession of any person studying or practicing in the field of school psychology, and it is the responsibility of professional preparation programs to ensure pre-service school psychologists exit programs with the most recent edition of such books, in hand.

The most frequently referenced book lists provide evidence of current areas of interest within particular journals. For example, six of ten books on *SPI*'s most frequently referenced list concern bullying and childhood aggression. The awareness that *SPI* is greatly influenced by texts on bullying and aggression can be important to

practitioners who are interested in implementing positive behavior support and violence and bullying prevention programs within a school district. The awareness may lead practitioners to access this international journal before seeking out the American journals in school psychology.

In addition, researchers may elect to submit original research on bullying and childhood aggression to *SPI* for publication due to the great influence of this content area on the journal. Similarly, researchers may choose to submit studies in curriculum-based measurement to *SPR*, and research involving more traditional forms of assessment to *JPA*. The citation trends can also be of some utility to editorial boards of the journal outlets to identify over- and under-represented research areas. Editorial boards can further strengthen over- or under-represented areas of influence through invited works and mini-series proposals.

The Most Frequently Cited Authors

Due to differences in methodology (i.e., inclusion of *JPA* and evaluation of first author impact only), the findings in the present investigation do not lend themselves to direct comparison with other citation analyses examining the most influential authors. Yet, in spite of different methodology, Kwak's (2002) general conclusions about the 1995-1999 data continue to represent the data over the 10-year period. First, the most frequently cited authors differ across the six school psychology journals. No single author in the top forty inventory (Table 3-29) appeared in the individual top twenty lists of all six school psychology journals The only first author to do so was a group author, the American Psychiatric Association.

An interesting aspect of the authorship data concerns the impact of women authors. Whereas six of 20 (30%) of the most prolific authors in school psychology journals from 1991-2003 were women (Davis et al., 2005), only two of the 20 (10%) most frequently referenced authors from 1995-2004 were women. The results viewed jointly underscore the uneven influence of male and female authors in a discipline dominated by women practitioners. These results suggest that women are less likely to author journal articles than women and, moreover, if they do author articles, they author fewer than do men. More bibliometric research specific to gender is needed to confirm this hypothesis, as Davis et al.'s data set and data set used to derive the present findings are not equivalent in years of study or journal pool entry.

One of the few limitations of utilizing the online SSCI database was that it provided information only regarding first authors. In a discipline wherein the most widely published authors average more than two authors per publication (Davis et al. 2005), the elimination of additional authors from the investigation under-values the worth and performance of important collaborators in the school psychology literature. The contribution of S.N. Elliott and D. Fuchs illustrate the point. S.N. Elliott and D. Fuchs ranked second and ninth, respectively, as the most frequently cited authors in Kwak's (2002) findings wherein a first author contribution was scored equally with a second or later contribution. S. N. Elliott ranks twenty-third in the current study, whereas D. Fuchs fails to hold a position in the forty most frequently cited first authors.

Journal Impact and the Importance of Contemporary Citations

Articles from *SPR, SPQ,* and *JSP* were found to have the most impact in school psychology independent of journal size. The average citation per publication statistic

revealed that although *PITS* yields a high number of publications and a relatively high number of citations, publications from *PITS* were less influential than those from *SPR, SPQ*, and *JSP* when controlled for journal size. Interestingly, *JPA* and *PITS* were found to have comparable impact, and *SPI* was found to be the least influential.

The citation distribution for 2004 (Figure 3-1) suggests that authors in the school psychology outlets incorporate new information at a fairly rapid pace. In addition to confirming that a dynamic body of literature influences school psychology, it also signals that the outlets, when analyzed collectively, serve a "research front" function, as opposed to an "archival" function (Price, 1970).

CHAPTER V

CONCLUSION

Citation studies have been useful in tracking the spheres of influence that have shaped contemporary school psychology literature. Because school psychology authors appear to quickly incorporate and reference new literature within their works, periodic citation analyses will be necessary to delineate shifts in the most influential journals, texts, and authors in the discipline.

Additional citation research may also speak to the impact of changes with regard to federal legislation. The final year of the present study, 2004, represents a natural breaking point in special education policy. President George W. Bush reauthorized the Individuals with Disabilities Education Act (IDEA) on December 3, 2004. Within the law, certain principles and language inherent to the No Child Left Behind Act of 2002 merged with special education mandates. The definitions of what constituted a lack of instruction were strengthened, and the conceptual model of what constitutes a Specific Learning Disability (SLD) was reworked and the condition redefined. IDEA 2004 mandates that a "state may not require the use of the ability-achievement discrepancy formula in determining eligibility for SLD," and that "districts may use a process that determines if the child responds to scientific research-based intervention as part of the evaluation procedures for determining eligibility." Thus, the influence of IDEA 2004 and the literature supporting its implementation will be an important to target in future citation studies given the far-reaching changes that are currently occurring at the school level for general educators, special educators, and school psychologists, alike.

One unintentional consequence of the study worthy of consideration is the findings specific to *JPA,* and the outlet's role as a school psychology journal. Bibliometric investigations in school psychology such as Carper and Williams (2004) often exclude *JPA*, stating that *JPS, PITS, SPI, SPQ*, and *SPR* are the representative journals in school psychology and citing Little (1997), Clark and Reynolds (1981), O'Callaghan (1974), and/or Webster et al. (1993) to support this conclusion. Yet, the current findings, concomitant with other recent bibliometric results, suggest otherwise.

JPA is the second most insular school psychology journal. This means that *JPA* authors reference more school psychology journals (i.e., self citations and cross citations) than the authors of all other school psychology journals except *SPQ*. *JPA* did not achieve this status with a high number of self-citations, alone. Rather, *JPA* ranks second among the six outlets in the frequency with which it cross-references the other school psychology journal publications. In terms of impact independent of size, *JPA*'s citation per publication average was nearly equivalent to that of *PITS*, and higher than that of *SPI.*

Other bibliometric findings are valuable when considering the value and impact of *JPA*. Carper and Williams' results illustrate that faculty from APA accredited school psychology programs published articles in *JPA* more frequently than they published in *SPI.* Moreover, these same faculties published only 8 and 5 more articles in *JSP* and *PITS*, respectively, than they did in *JPA* (151-152). Such differences do not appear to be practically or statistically significant. In conclusion, it appears that JPA should be included with *JSP, PITS, SPI, SPQ, SPR* in future citation analyses of the school psychology literature.

Such analyses, like the present one, can provide interesting and potentially important information regarding the exchange of information within and outside the school psychology literature. In the not so distant past, such analyses required laborious and error prone scanning, recording, and tabulating from the reference lists of printed journal articles. Use of a web-based version of the SSCI streamlined data collection and organization in the present study, allowing for a relatively extensive and sophisticated analysis. Technology relevant to storing and managing scientific publications continues to advance rapidly, and extensive and relatively easy-to-use citation databases, such as *Scopus*, recently have become available. Their use will make future bibliographic analyses easier to conduct than prior ones and should foster increased interest in this somewhat neglected area of investigation.

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