



Researchers in Music Education/Therapy: Analysis of Publications, Citations, and Retrievability of Work

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This study offers a look at accepted standards for evaluation of eminence and productivity in the scientific community and updates the database established by Standley (1984) from the contents of the three premier journals in the field of music education/therapy research: the Journal of Research in Music Education (JRME), the Bulletin of the Council for Research in Music Education (CRME), and the Journal of Music Therapy (JMT). Data from the last 10 years were combined with those in the prior study (inception of the journals through 1982) to identify music researchers with the most publications in the three journals evaluated, to identify the most productive universities in contributing to the research literature, and to identify the most-cited scholars in the field for a period representing a span of more than 40 years. Due to the advent and reliance upon computerized literature searches, the classification of productive authors' research by specialists outside the field was also analyzed to ascertain retrievability. Generally, these results showed that, on average, only 50% of selected authors' works were retrievable via combined searches of ERIC and PsycLit and that most authors' studies were labeled with great diversity. Implications for standards of evaluating eminence, for the ongoing compilation of eminence/productivity data, and for use of computerized databases to locate research are discussed.

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Researchers in Music Education/Therapy: Analysis of Publications, Citations, and Retrievability of Work

“Research activity is a primary indicator of the intellectual health and academic status of a field or discipline” (Schmidt & Zdzinski, 1993, p. 5). Analysis of such activity in the field of music education/therapy research has a long and varied tradition. Previous reviews of this re-

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search have identified primary research topics and the principal variables explored by authors (Sample, 1992; Sidnell, 1972), particular modes of inquiry (Gilbert, 1979; Hedden, 1983; Jellison, 1973; Yarbrough, 1984), content of a particular journal (Hedden, 1993; James, 1985), contributions by school-based music educators (Grashel & Lowe, 1995), aspects of training programs that produce research activity (Abeles, 1976), and the reward structure for research activity (LeBlanc & McCrary, 1990). Productivity of individual researchers has been documented by Abeles and Carroll (1981) for the period 1965 to 1975 and by Standley (1984) from inception of the three primary journals in the field through 1982. Additionally, Standley (1984) compiled citations by author of the total contents of three refereed journals and Schmidt and Zdzinski (1993) compiled citations in *JRME* by article to identify the contributions with the greatest impact on other researchers' work. Recently, Kratus (1993) counted the number of citations in a nonrefereed compilation of research essays and raised issues of accepted practice for assessing eminence within a professional field.

Developing a system of ongoing assessment of achievements in the field would seem to be a valuable endeavor if done within accepted standards of scholarly evaluation. Such ongoing assessment might allow music educators and therapists to compare the health and standing of their professions among other areas of science and academia while documenting the influence of individuals and promulgating standards of excellence for the field. It might also provide a yardstick against which to measure new research contributions and might help educators and therapists gain perspective in the development of future bodies of work (Sample, 1992).

Once eminent scholars are identified, to what extent are others able to locate their work? The availability of productive and eminent authors' work may recently have been affected by the advent and reliance on computerized literature searches that conduct subject searches according to keyword classifications assigned by people outside the field. How is research within the field perceived by those outside the profession as they classify and subsequently affect access to published material?

The profession seems to perceive itself as extremely diverse. Radocy, reflecting on Schmidt and Zdzinski's list of influential articles (1993), has noted that music education research may have either "a lack of focus—or perhaps a desirable diversity" (p. 4). This observation lies in the finding that, of 922 articles cited by Schmidt and Zdzinski (1993), the three most frequent classifications of dependent variables occurred only six times, and the most frequent classification of an independent variable was found seven times. Furthermore, the most frequently cited article was only referenced 24 times in 15 years. Rainbow and Froelich (1987) have also noted the diversity in research in music education, describing it as "myriads of seemingly unrelated observations" (p. 17), and have speculated that its appearance as "unordered bits and pieces of a giant puzzle" (p. 17) may be due to the relative newness of the field. They believe that more time may have to pass before its pieces are

sorted and ordered. Thus, it might be expected that keyword classification for computerized literature searches within this field would need to reflect this diversity.

Findings in research on the development of ability to transfer knowledge from one area of information to another (Geringer & Madsen, 1987; Madsen & Prickett, 1987) may, however, relate to another aspect of classifying research in this area. These data imply that bringing the mass of diverse research findings into focus may depend largely on a scholar's ability to make associations and generalize, for example, transferring results from research on creativity to use in instructional strategies, from testing and measurement to teaching and learning, and from clinical settings to classroom environments. Thus, classification by technicians lacking the ability to identify the interrelatedness of topics might result in development of a system with serious limitations for the sophisticated music education/therapy researcher.

The purpose of this article, then, is threefold: to discuss and specify scholarly standards for the evaluation of productivity and eminence, to contribute to the objective establishment of ongoing evaluation of eminence in the field by updating the original Standley database (1984) with analysis from the last 10 years (1983–92), and to review the classification of productive and eminent authors' work to determine its retrievability in two primary literature databases, ERIC and PsycLit.

Scholarly Standards for Evaluating Eminence

Many disciplines rely solely on quantitative measures of productivity for rating eminence of their scholars (Myers, 1970; West, 1978), whereas others advocate citation analysis as an objective measure of the quality or importance of the research published (Kroc, 1984; Smith & Caulley, 1981). Reliance solely on citation frequency has been criticized for lack of qualitative criteria. Specific complaints include the equal inclusion of positive and negative references to authors' work; data biases due to the impact of short-term fads that, over time, may not prove substantive; the reality of author arbitrariness in citation selection; inflation due to self-citation; and the exclusion of recent, substantive work due to the lag time from publication to recognition and subsequent citation. Also, methods of selection, counting, and classification can vary and thus bias the results.

Despite these criticisms of citation analyses, they are increasingly important in science, government, and industry (Taubes, 1993a), and researchers with experience in citation compilation discount the aforementioned criticisms (Taubes, 1993b). They argue that arbitrariness and extravagant self-citation are typically censored in the stringent peer review process of the most respected journals. Thus, authors learn to cite themselves more judiciously or are forced to publish in less respected sources, which subsequently reduces others' citation of their work. Citation experts assert that it is usual for 20 to 25% of a paper's references to be self-citations, which serve the positive function of placing the author's work in context (Taubes, 1993b).

Experts also discount the concern about lack of discrimination between positive and negative citations of work, since analyses show that only about 7% of all citations are negative. Furthermore, the exceptional cases where the overwhelming number of citations are negative are easily recognizable, as in the cold fusion controversy in the field of physics (Taubes, 1993b).

Once an identifiable pool of research on a particular topic exists, studies have shown that citation counts remain relatively stable over time (Cole & Cole, 1973; Myers, 1970). This would seem to indicate that the variable of time provides a qualitative measure of a work's substance and reduces the impact of citation bias due to short-term or popular appeal.

Review and analysis of the citation literature reveal that scholarly standards for evaluation of eminence within a body of research call for the following procedures: (1) that an identifiable field and period of research be clearly specified and objectively evaluated in its entirety; (2) that the most eminent, refereed publication sources within that field be selected for analysis with the assumption that those selected sources will have been subjected to the most stringent standards of peer review for the determination of their content; and (3) that procedures and methodology of evaluation be clearly elucidated with enough specificity for replication (Kroc, 1984; Myers, 1970; Roche & Smith, 1978; Taubes, 1993a).

Evaluations such as that by Kratus (1993) deviate somewhat from the above. He counted citation frequency within an edited volume of music research essays whose preface stated that the content was not intended to be exhaustive of the topic and whose authors were selected by an individual editor rather than by peer review (Colwell, 1992, p. x). Of course, different rationales result in different data.

Standley (1984) initiated a combined productivity/eminence approach that quantified author productivity and citation frequency and overall institutional productivity measures for the three primary journals in research in music education/therapy: the *Journal of Music Therapy (JMT)*, the *Journal of Research in Music Education (JRME)*, and the *Bulletin of the Council for Research in Music Education (CRME)*, from inception through 1982. This analysis defined the topic clearly: research in music education/therapy, two allied fields with a great deal of overlap in research interests as evidenced by the amount of cross-publication and cross-citation. This overlap in interest was demonstrated by Schmidt and Zdzinski (1993), who identified the 26 studies cited most frequently in the *JRME*, *CRME*, *JMT*, *Psychology of Music*, *Contributions to Music Education*, and *Missouri Journal of Research in Music Education* and found that they came from the *JRME*, *CRME*, and *JMT*.

In her 1984 analysis, Standley selected the most eminent journals in the field with the most stringent peer review procedures and analyzed their total published articles. All data collection procedures were clearly and thoroughly specified. Furthermore, for the purposes of this study, research was used as a global term to include all scholarly articles of all types that survived the collective judgment of each journal's ref-

ere process. Excluded from this database were items such as book reviews, dissertation reviews, and reader comments and responses. Maintaining this established productivity/eminence database across time would seem to provide a timely and comprehensive assessment of research activity that includes both qualitative (time) and quantitative (productivity) criteria. Because it has been more than 10 years since this first analysis of citation frequency and productivity was conducted, an update would seem useful.

METHOD

In expanding the 1984 Standley database, all productivity/citation tabulations were made according to the procedures of the original study. Credit for each article published was given equally to each contributing author for all studies published in *JMT*, *JRME*, and *CRME* from 1983 to 1992 and combined with the tabulations of contributions from 1964 to 1982. The cumulative references for all articles published in the journal in this 10-year period (1983–92) were also quantified by individual scholar cited. References not attributed to individuals were not included. Finally, institutional affiliations of authors were tabulated for articles and for site of dissertation completion for all dissertations reviewed in *CRME*.

Unavoidable problems may exist with accurate attribution to individuals included in such a large pool spanning almost 100 years of combined publication. Recent reliance on author last names and only one or two initials in accepted citation formats often made it difficult to credit accurately, especially when individuals share the same last name as well as some initials. Sometimes the authors were familiar enough with the individual's work or had available sources to assure accurate attribution. In some few cases, however, accuracy cannot be assured. Similarly, compiling attributions for people who publish under more than one name in the course of their careers (such as women whose names may change with marital status) can present a problem. Again, when verified, attribution was compiled under known multiple listings for such authors.

As part of the analysis of classification and retrievability of research, abstracts from inception of the journals through 1992 were collected for each author identified in the most-productive list from the ERIC and PsycLit databases. Abstracts for journals and books other than the targeted journals in the eminence determination were discarded. When both databases included abstracts of the same article, the ERIC abstract was selected for analysis.

For each abstract selected, the major identifiers were listed and compiled as indicators of subject area. These major subject identifiers are the keywords added to the abstract by specialists at the headquarters of the database, which are then used by researchers in doing subject searches. Major subject identifiers were selected for evaluation since (a) they are applied by an independent source according to unknown criteria and (b) they are subsequently and widely used to guide further

Table 1
Comparisons of Author Population of Three Music Research Journals

	<i>JRME</i>	<i>CRME</i>	<i>JMT</i>
Year of inception	1953	1963	1964
Number of authors from inception to 1982	775	361	353
Mean authors/year	25.8	18.1	18.5
Number of authors, 1983–92	194	201	180
Mean authors/year	19.4	20.1	18.0
Total number of authors	969	562	533
Percentage of authors with a single-article contribution up to 1982	54%	47%	71%
Percentage of authors with a single-article contribution, 1983–92	78%	81%	81%

Note. *JRME* = *Journal of Research in Music Education*; *CRME* = *Bulletin of the Council for Research in Music Education*; *JMT* = *Journal of Music Therapy*.

research endeavors.

Major subject identifiers were compiled according to the following guidelines:

(1) Equivalent terms, such as “disability” and “disabled,” were considered to be the same keyword.

(2) Two terms with independent meanings separated by a hyphen were counted as two separate subject identifiers, for example, “perception-tests” might fall under the research area of perception or the research area of testing and measurement.

(3) Hyphenated words deemed to have little pertinent meaning as separate components were counted as one term, for example, “hypothesis-testing.”

(4) As abstracts from the three selected journals were all consistently categorized under the major subject identifiers of “music,” “music education,” or “music therapy,” these major subject identifiers were omitted from subsequent analysis due to their breadth.

For each of the identified authors, the number of his or her abstracts featuring an identified major subject identifier was counted. *D-Base IV* software was used to compile data on keywords, titles, and authors.

Table 2
The 23 Most Productive Music Researchers (1953-1992)

Researchers	<u>JRME</u>		<u>CRME</u>		<u>JMT</u>		Sum	Rank
	1982	1992	1982	1992	1982	1992		
C. K. Madsen	6	10	4	7	14	8	49	1
J. M. Geringer	3	6	2	5	3	16	20	2
J. Alley/Standley	0	4	0	0	7	5	1	3.5
R. A. Duke	0	11	0	5	0	0	16	3.5
A. LeBlanc	3	8	2	0	2	0	15	5
L. G. Dorow	5	1	1	0	6	1	14	6.5
E. E. Gordon	4	0	4	5	1	0	14	6.5
E. P. Asmus	4	2	1	3	2	1	13	8.5
A. A. Darrow	0	3	0	0	1	9	13	8.5
J. Gilbert/Galloway	4	1	0	0	5	2	12	10.5
A. L. Steele	0	0	0	0	12	0	12	10.5
R. S. Moore	3	0	2	2	1	3	11	12.5
C. Yarbrough	3	4	0	2	2	0	11	12.5
J. D. Boyle	5	0	3	2	0	0	10	16
R. D. Greer	2	0	3	0	4	1	10	16
S. K. Hedden	4	1	3	1	1	0	10	16
G. Heller	1	4	1	2	1	1	10	16
M. J. Staum	0	1	0	1	4	4	10	16
C. Braswell	0	0	0	0	4	5	9	21
R. Colwell	3	0	6	3	0	0	9	21
P. A. Haack	0	2	6	1	0	0	9	21
H. E. Price	1	6	0	2	0	0	9	21
B. Reimer	2	0	4	3	0	0	9	21

Note. JRME = *Journal of Research in Music Education*; CRME = *Bulletin of the Council for Research in Music Education*; JMT = *Journal of Music Therapy*. 1982 = Total studies published by this author from the journal's inception to 1982; 1992 = Total studies published by this author in the period 1983-92.

Calculations were converted to percentages for comparison among authors. Reliability between two independent researchers on categorization of these terms was .92.

RESULTS

A comparison of author populations for the three journals is shown in Table 1. It is evident that the author pool remained approximately the same size in the last 10 years as in the prior period for the *CRME* and *JMT*. However, the author pool decreased in the last 10 years for the *JRME*. This table also shows that the percentage of authors who are credited with a single publication in the last 10 years has greatly increased for

all of the journals, but especially for the *JRME* (from 54% to 78%) and for *CRME* (from 47% to 81%). It is also interesting to note that the percentage of single-article authors in the last 10 years has become almost equivalent for the three journals.

Author productivity results are shown in rank order in Table 2 and reveal that several authors have sustained or increased productivity levels from the first evaluation (1964–82) to the second evaluation (1983–92), notably Madsen, Geringer, LeBlanc, Asmus, Moore, Yarbrough, Staum, and Braswell. The emergence of several authors with high productivity in the past 10 years is also evident, particularly Duke, Darrow, Heller, and Price. The most productive author in the last 10 years was the same individual as in the prior time period, Clifford K. Madsen.

Table 3 shows the citation frequency of the most eminent music research scholars. Clifford K. Madsen is the most-cited author in the last 10 years as he was in the prior study. Comparison with Table 2 demonstrates an expected and strong relationship between productivity and number of citations. Further comparison of this table with the similar listing in the prior study reveals that citation rate has remained relatively stable, with 76% of those currently listed having been on the 1984 list. Notable new additions of scholars emerging in the last 10 years include Geringer, LeBlanc, Duke, Moore, and Radocy.

In 1993, Schmidt and Zdzinski (1993) identified and analyzed the most-cited articles in the area of music research for a 15-year period, omitting self-citations in the selection. The authors of these landmark studies from the mainstream of music research were compared with the listing in this table. Again, 73% of the first authors listed in the 26 studies most referenced by others in the field were included in the current listing of eminent scholars. These cross-comparisons seem to verify that the citation listing for eminence in music education/therapy research remains relatively stable over time, while still allowing for the emergence of those with recent achievement, and that the citation listing for eminence reflects qualitative contribution in addition to quantitative ranking.

Productivity rates by institutional affiliation are given in Table 4 in rank order. Academic sites are shown to be very stable in productivity across the entire period of evaluation; only one university in the current listing (Louisiana State University) was not listed in 1984. The University of Texas at Austin made the greatest change in rank, moving from 16th to 3rd place.

Table 5 lists universities with the greatest number of dissertations reviewed in *CRME*. Again, this listing remains extremely stable across the two studies. Only three universities are included here that were not listed in the prior study: the University of Wisconsin–Madison, Arizona State University, and the University of North Texas.

Analysis of productive authors' work as classified by the selected databases showed that only 50% of the targeted articles' abstracts could be found via a search of the ERIC and PsycLit databases. Table 6 shows the number and percentage of authors' works found in the databases.

Table 3

The 25 Most Eminent Music Researchers: Combined Citations from JRME, CRME, and JMT (1953-1992)

Researchers	Citations to 1982	1983-92			Sum	Rank
		JRME	CRME	JMT		
C. K. Madsen	289	232	83	69	673	1
E. E. Gordon	115	41	74	11	241	2
J. M. Geringer	24	127	45	8	204	3
C. H. Madsen	105	53	19	24	201	4
R. D. Greer	100	46	13	15	174	5
T. L. Kuhn	40	86	28	12	166	6
L. G. Dorow	86	36	7	27	156	7
C. Yarbrough	37	71	23	11	142	8
M. Pflederer/Zimmerman	68	29	36	4	137	9
A. LeBlanc	13	87	17	17	134	10
E. T. Gaston	100	3	2	17	122	11
J. Alley/Standley	17	29	9	43	98	12
P. R. Farnsworth	66	12	12	2	92	13
J. Mursell	67	14	9	0	90	14
D. E. Wolfe	24	25	6	34	89	15
J. L. Forsythe	46	22	12	7	87	16
R. Colwell	46	14	23	3	86	17
R. G. Petzold	45	18	15	7	85	18
R. A. Duke	0	57	27	0	84	19.5
R. S. Moore	25	32	17	10	84	19.5
S. B. Hanser	35	9	2	26	72	21
B. Reimer	34	9	27	1	71	22
C. E. Seashore	47	10	12	1	70	23
R. E. Radocy	14	27	22	4	67	24
K. Hevner/Mueller	51	4	6	3	64	25

Note. JRME = *Journal of Research in Music Education*; CRME = *Bulletin of the Council for Research in Music Education*; JMT = *Journal of Music Therapy*.

The located abstracts ($n = 156$) contained a total of 632 keywords.

Table 6 also shows the major subject identifiers most often assigned to each author's abstracts and the percentage of each author's work classified under these keywords. The term(s) listed represent the major subject identifier(s) used most often for each author. More than one term listed for an author indicates a tie between keywords.

Of the 23 authors studied, three (Colwell, Greer, and Reimer) had only one abstract included in the databases. If these three authors are excluded, the mean percentage of studies per author categorized

Table 4

The Top 20 Academic Institutions in Music Research Productivity: Combined Publications from JRME, CRME, JMT (1953-1992)

University	Articles to 1982	1983-92			Sum	Rank
		<i>JRME</i>	<i>CRME</i>	<i>JMT</i>		
Florida State University	54	20	10	26	10	1
University of Kansas	54	15	9	18	96	2
University of Texas at Austin	11	23	11	1	46	3
University of Illinois	27	0	11	0	38	4
Loyola University	16	1	0	20	37	5.5
University of Iowa	20	4	4	9	37	5.5
Ohio State University	23	9	3	0	35	7
Michigan State University	12	15	0	4	31	8.5
University of Georgia	16	1	3	11	31	8.5
Kent State University	9	12	8	0	29	10
University of Indiana	14	8	6	0	28	11
Teachers College-						
Columbia University	17	2	0	3	22	12.5
University of Wisconsin-						
Madison	10	6	6	0	22	12.5
SUNY-Buffalo	12	2	6	1	21	14
Louisiana State University	2	8	8	1	19	15
University of Kentucky	11	6	1	0	18	16
University of Minnesota	13	2	0	2	17	17
Pennsylvania State University	16	0	0	0	16	19
University of Miami	9	1	3	3	16	19
University of the Pacific	10	1	0	5	16	19

Note. *JRME* = *Journal of Research in Music Education*; *CRME* = *Bulletin of the Council for Research in Music Education*; *JMT* = *Journal of Music Therapy*.

under a single keyword was 50%. Individual authors' abstracts ranged from 20% listed under a common keyword to 100% classified under a particular keyword. The author with the highest percentage (Moore) had all three of his abstracts listed under the term memory. Researchers within the field may find they would disagree with the keyword classifications given to certain authors' work as reflected by Table 6. It should be remembered that only the most frequently assigned keywords are shown and that many other keywords were assigned to the studies, but in smaller proportions.

DISCUSSION

Table 5
The 20 Academic Institutions with the Greatest Number of Dissertations Reviewed in CRME (1963–1992)

Rank	Academic Institution	1963–82	1983–92	Total
1	University of Illinois	30	16	46
2	Teachers College–Columbia University	33	8	41
3	University of Indiana	27	11	38
4	Florida State University	24	11	35
5	University of Iowa	27	5	32
6	Ohio State University	18	12	30
7	University of Michigan	13	11	24
8	Northwestern University	14	9	23
9	Michigan State University	17	5	22
10	New York University	15	3	18
11	University of Oklahoma	11	6	17
13	University of Oregon	11	5	16
13	University of Southern California	13	3	16
13	University of Wisconsin–Madison	8	8	16
15.5	Pennsylvania State University	12	3	15
15.5	University of Kansas	11	4	15
17.5	Arizona State University	2	12	14
17.5	University of Kentucky	11	3	14
19	North Texas State University	4	9	13
20	University of Minnesota	9	3	12

Note. CRME = *Bulletin of the Council for Research in Music Education.*

The empirical evidence of this study demonstrates that the field of music education/therapy research as represented by the published content of its three premier journals is a vibrant, developing science with a core of committed, sustained contributors and an emerging population of talented, productive individuals. Overall, the citation analysis reveals that productive individuals are also producing work deemed important to their colleagues. These issues bode well for the future of music research and for continued contribution to the development of the fields of music education and music therapy. Periodic evaluation and updating of such a database by means of established scholarly standards of evaluation would seem justified.

The productivity data in this study were compiled solely from the three journals considered to be the premier research publications in the fields of music education/therapy. These data procedures were identical to those of the original study since one intent was to update

Table 6

Results of Computer Retrieval Classification Analysis: Most Frequent Major Subject Identifiers and Percentage of Studies Found

Researchers	Abstracts included/ Percentage located of total studies (1953-92)	Total keywords	Most-used major subject identifier	Percentage of database abstracts using major keyword
Madsen, C. K.	27/55%	87	Teacher	26%
Duke, R.	13/81%	50	Adulthood, students	38%
Geringer, J.	12/60%	45	Discrimination	58%
Standley, J. (Alley)	12/75%	62	College, training, teacher, education	25%
Asmus, E.	10/77%	42	Students	50%
Heller, G.	8/80%	18	History	50%
Price, H.	8/89%	19	Attitudes	63%
Darrow, A.	7/54%	32	School-age, children, childhood, partially hearing impaired	57%
LeBlanc, A.	7/74%	24	Attitudes, student	43%
Boyle, J. D.	6/60%	22	Attitudes, student	50%
Haack, P.	6/67%	27	Perception	33%
Braswell, C.	5/56%	20	Adulthood, clinical methods	60%
Gordon, E. E.	5/36%	25	Tests	60%
Hedden, S.	5/50%	17	—	20%
Steele, A.	5/42%	22	Behavior	60%
Staum, M.	5/50%	31	Auditory, preschool-age, school-age, children childhood	60%

(Table continues on next page.)

Table 6 (concluded)
Results of Computer Retrieval Classification Analysis: Most Frequent Major Subject Identifiers and Percentage of Studies Found

Researchers	Abstracts included/ Percentage located of total studies (1953–92)	Total keywords	Most-used major subject identifier	Percentage of database abstracts using major keyword
Yarbrough, C.	5/45%	22	Behavior, teacher activities	40%
Moore, R.	3/27%	30	Memory	100%
Dorow, L. G.	2/14%	12	—	50%
Galloway, J. (Gilbert)	2/17%	12	—	50%
Colwell, R.	1/11%	9	—	
Greer, R. D.	1/10%	2	—	
Reimer, B.	1/11%	2	—	

and extend the original database (Standley, 1984). However, many other journals now exist that have developed since the original study was conceived. Some of these include publications of MENC such as the *Journal of Music Teacher Education* and *Update: Applications of Research in Music Education*, publications of the National Association for Music Therapy such as *Music Therapy Perspectives*, publications sponsored by individual universities such as *Psychomusicology*, *The Quarterly Journal of Music Teaching and Learning*, and *The Bulletin of Historical Research in Music Education*, and publications with more of an international thrust such as *Psychology of Music*. Had any of these journals been included in the database, then it is obvious that productivity rankings would differ.

Examination of computerized database keywords shows that the most productive, eminent researchers do not seem to follow exclusive research agendas and that the perception of their work by those outside the field is wide-ranging. The breadth of influential research identified by Schmidt and Zdzinski (1993) was replicated in this study both on an individual level and across the field. Of the 23 most productive authors studied, only one-third had more than half their work categorized under a common major subject identifier. On average, half of authors' abstracts were labeled under a single topic. How such classifications are assigned is interesting of itself to contemplate. The possi-

bility exists that these findings are more indicative of how others view the field than how music researchers themselves view it. Perhaps examining other sources of classification would lead to different results.

Only half of authors' publications could be located through the databases of ERIC and PsycLit in combination, which were selected for their wide accessibility in university libraries. There may be a variety of reasons for this discrepancy. It is possible that some early studies may not have been listed because the databases opted to include fewer studies published prior to their inception in the mid-1960s. Of the authors publishing the bulk of their work in the assessed journals since 1982, Duke and Price had the highest inclusion percentages (81% and 89% respectively), whereas Darrow had just over half her studies included. It may be that these databases have increased their inclusion rates of music education/therapy literature in the last decade, perhaps due to greater understanding or identification with the studies, more time to devote to surveying the literature, or the authors' ability or desire to compose titles and abstracts that engage outside readers. This study, however, was not designed to specifically analyze these databases' inclusion rates or policies over time, although such analyses might be informative.

Using additional resources such as the *Répertoire internationale de littérature musicale* (RILM) might improve the number of abstracts retrievable; however, RILM was not used in this study because it is no longer carried on-line and has become less accessible than ERIC or PsycLit. Those faculty who teach research methods courses might be advised to share these results with students undertaking research for the first time. Relying exclusively on ERIC and PsycLit may result in failure to locate up to 90% of an author's work in certain journals. This may become less of a consideration in the future as new information sources in music have recently been announced through the University of California, Irvine (1993), and through Eagle and Hodges (1993).

To what extent is it beneficial or detrimental that music education/therapy research classification reflects perceived diversity versus a more focused approach? Part of the difficulty in exploring breadth versus focus of subject matter is the issue of perspective. To one with little knowledge in the subject matter, various research topics may not relate. For example, those unversed in music education may not readily see that a study in perceptual discrimination has implications for those interested in preference and attitudes, instructional strategies, and learning and development. Thus, categorizers may omit references of value to many researchers in the field. However, a person with extensive knowledge may wish to research a topic very myopically precisely because he or she has the ability to discriminate, subdivide, and finely categorize into multiple mini-units. The breadth, specificity, and inter-relatedness of the categorization of the literature have great implications due to the variety of needs of the users.

The questions regarding the categorization of productive music education/therapy research will not be fully answered by this preliminary study of the system. Where some computer searchers may perceive a

hodgepodge of interests, others may see associated areas that all directly relate to the larger topics under scrutiny. Regardless, these findings may provide guidance to those beginning their own research agendas, those mentoring young researchers, and those evaluating the directions of music research.

Certainly, the methods used to evaluate any variable influence the resulting conclusions and should be carefully considered when evaluating individuals' and institutions' contributions to the field. As the selection of all procedures represents value choices, we urge the profession to continually address established and accepted scholarly standards in choosing criteria on which productivity and eminence are to be judged.

REFERENCES

- Abeles, H. F. (1976, March). *A problem quantified, or research in music education: Three status studies*. Paper presented at the National Biennial In-Service Conference of the Music Educators National Conference, Atlantic City, NJ.
- Abeles, H. F., & Carroll, M. R. (1981). *Aspects of the social structure of research in music education*. Paper presented at the national conference of the Music Educators National Conference, Minneapolis, MN.
- Cole, J. R., & Cole, S. (1971). Measuring the quality of sociological research: Problems in the use of the Science Citation Index. *American Sociologist*, 6, 23–29.
- Colwell, R. (Ed.). (1992). *Handbook of research on music teaching and learning*. New York: Schirmer.
- Eagle, C. T., & Hodges, D. A. (1993). Announcement of C.A.I.R.S.S. for Music™ [Press release], University of Texas at San Antonio, TX.
- Geringer, J. M., & Madsen, C. K. (1987). An investigation of transfer: Music education research and applied instruction. *Bulletin of the Council for Research in Music Education*, no. 91, 45–49.
- Gilbert, J. (1979). Published research in music therapy, 1973-78: Content, focus, and implications for future research. *Journal of Music Therapy*, 16, 102–110.
- Grashel, J., & Lowe, A. (1995). Contributions of school music educators to the research literature as published in the *Journal of Research in Music Education*, 1953–1993. *The Bulletin of Historical Research in Music Education*, 16 (2), 122–135.
- Hedden, S. K. (1983). *Published research in music therapy: 1973–1982*. Paper presented at the national convention of the National Association for Music Therapy, New Orleans, LA.
- Hedden, S. K. (1993). Music education research: A dozen conventions and a dozen JRME volumes. *The Bulletin of Historical Research in Music Education*, 15, no. 1, 17–30.
- James, M. R. (1985). Sources of articles published in the *Journal of Music Therapy*: The first twenty years, 1964–1983. *Journal of Music Therapy*, 22 (2), 87–94.
- Jellison, J. A. (1973). The frequency and general mode of inquiry of research in music therapy, 1952–1972. *Bulletin of the Council for Research in Music Education*, no. 35, 1–8.
- Kratus, J. (1993). Eminence in music education research as measured in the *Handbook of Research on Music Teaching and Learning*. *Bulletin of the Council for Research in Music Education*, no. 118, 21–32.

- Kroc, R. J. (1984). Using citation analysis to assess scholarly productivity. *Educational Researcher*, 21, 17–22.
- LeBlanc, A., & McCrary, J. (1990). Motivation and perceived rewards for research by music faculty. *Journal of Research in Music Education*, 38, 61–68.
- Madsen, C. K., & Prickett, C. A. (1987). Graduate versus undergraduate scholarship: A comparison of essay responses concerning professional responsibilities of music teachers. *Journal of Research in Music Education*, 35, 191–197.
- Myers, C. R. (1970). Journal citations and scientific eminence in contemporary psychology. *American Psychologist*, 25, 1041–1048.
- Radocy, R. E. (1993). Forum. *Journal of Research in Music Education*, 41, 4.
- Rainbow, E. L., & Froelich, H. C. (1987). *Research in music education*. New York: Schirmer.
- Roche, T., & Smith, D. L. (1978). Frequency of citations as criterion for the ranking of departments, journals, and individuals. *Sociological Inquiry*, 48, 49–57.
- Sample, D. (1992). Frequently cited studies as indicators of music education research interests, 1963–1989. *Journal of Research in Music Education*, 40, 153–157.
- Schmidt, C. P., & Zdzinski, S. F. (1993). Cited quantitative research articles in music education research journals, 1975–1990: A content analysis of selected studies. *Journal of Research in Music Education*, 41, 5–18.
- Sidnell, R. (1972). The dimensions of research in music education. *Bulletin of the Council for Research in Music Education*, no. 41, 5–18.
- Smith, N. L., & Caulley, D. N. (1981). The evaluation of educational journals through the study of citations. *Educational Researcher*, 10 (5), 11–12; 22–24.
- Standley, J. M. (1984). Productivity and eminence in music research. *Journal of Research in Music Education*, 32, 149–157.
- Taubes, G. (1993a). Measure for measure in science. *Science*, 260, 884–886.
- Taubes, G. (1993b). Citation rankings: No technical knockout? *Science*, 260, 885.
- University of California, Irvine. (1993). Announcing a free information source in music [Press release]. (Available from Norman M. Weinberber, Irvine, CA, 92717-3800).
- West, C. K. (1978). Productivity ratings of institutions based on publication in the *Journal of the American Educational Research Association*: 1970–76. *Educational Researcher*, 7 (2), 13–14.
- Yarbrough, C. (1984). A content analysis of the *Journal of Research in Music Education*, 1953–1983. *Journal of Research in Music Education*, 32, 213–222.

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