

PERCEIVED QUALITY AND CITATION RATES OF EDUCATION JOURNALS

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Citation rates have been shown to be positively related to the scholarly stature of individuals, academic departments, and scientific journals in a number of academic disciplines. The results of this study show a much weaker relationship between the citation rates and perceived quality of education journals than reported in studies of other disciplines. However, this overall finding masks wide variation in the relationship for specific education specialty areas and between "core" and "allied" education journals. The implications of these findings for subsequent research on the complex process of knowledge diffusion and utilization are discussed.

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Citation analysis is a special form of bibliometric research used to assess the quality or importance of scientific contributions (Narin and Moll, 1977; Jones, 1980). This methodology is based on the reference citations found in scientific publications and assumes that citation frequency data can be used to assess the significance of scientific contributions of individual scientists, academic departments, and scholarly journals (Narin, 1976; Garfield, 1979).

In light of the absence of absolute standards against which this fundamental assumption can be tested, Garfield et al. (1978) suggested that "all that can be done, and perhaps all we can expect to do, is to compare results of different methodologies and attempt to find significant correlations between them" (p. 180). The results of such inquiries indicate a rather consistent pattern of moderate to high correlations between citation frequency measures and perceptions of the scholarly stature of individual scientists (Clark, 1957; Cole and Cole, 1967; Crane, 1965) and academic departments (Hagstrom, 1971; Anderson et al., 1978; Schaeffer and Sulyma, 1979).

Comparable studies have been undertaken to determine the relationship

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between the perceived quality and citation rates of scholarly journals in three academic disciplines. White and White (1977) reported rank order correlations of .56 ($n=44$) and .39 ($n=49$) between the citation rates of psychology journals and subjective judgments of their quality reported by Mace and Warner (1973) and Koulack and Keselman (1975), respectively. The rank order correlations between the citation rates of sociology journals (Roche and Smith, 1978) and subjective judgments of their quality, reported by Glenn and Villemez (1970) and Glenn (1971), were .65 ($n=24$) and .63 ($n=25$), respectively. McDonough (1975) reported a rank order correlation of .87 ($n=70$) between the perceived quality and citation rates of economics journals. These findings suggest the validity of journal citation rates as an "objective" measure of journal quality in psychology, sociology, and economics.

There has been a growing use of citation analysis procedures to discern the scope and structure of the education journal literature. For example, Narin and Garside (1972) examined the linkages between special education, general education, and psychology journals, Turner and Kiesler (1981) explored the relationship between education and basic science journals, and Walberg et al. (1981) studied the intercitation patterns of 40 education and psychology journals. Other research has assumed that citation frequency measures are reasonably valid indicators of quality in the field of education, and variation in the number of citations received by education articles (Boshier and Pickard, 1979), books (Elton and Smart, 1983), faculties (Arlin, 1978), and journals (Smith and Caulley, 1981; Smart and Elton, 1981) has been examined.

The central purpose of this study was to determine the relationship between the perceived quality and citation rates of education journals. Given the known diversity among academic disciplines (see, for example, Biglan 1973; Hargens, 1975), caution should be exercised in generalizing the findings obtained from research on a single academic discipline to other fields of study. A second purpose of this study was to examine possible variation in this overall relationship between the perceived quality and citation rates of education journals by (1) members of specialty areas in the field of education and (2) journal type. It seems reasonable to expect that this overall relationship might vary for different educational specialties and for journals that are central to and on the periphery of the field of education. Such variation has not been examined in comparable studies of other disciplines, even though such studies were based on heterogeneous mixtures of respondents and journals.

METHODS AND RESULTS

Methods

Luce and Johnson (1978) obtained perceptions of the relative quality of 74

educational research journals from a randomly selected sample of American Educational Research Association (AERA) members. Respondents ($n = 678$) were asked (1) to indicate the AERA division (i.e., education specialty area) which corresponded most nearly to their professional interests and (2) to select and rank "those journals that you consider to be among the top ten; in other words, those journals in which you would most like to be published and/or those in which you expect to find material important to you as an educator" (Luce and Johnson, 1978, p. 8).

Two measures were available for 64 journals (86%) in the initial sample. The Perceived Quality¹ of education journals was determined by the number of times each journal was selected as being among the "top ten" in the Luce and Johnson (1978) study. The measure was computed for the entire sample ($n = 678$) and for each of the nine education specialty areas included in the Luce and Johnson (1978) survey. The second measure was the Citation Rate of each journal obtained from the 1978 *Social Science Citation Index (SSCI)*, *Journal Citation Reports* (Institute for Scientific Information, 1979). The Citation Rate represents the average number of citations received in 1978 by articles published in the education journals during 1976 and 1977. This measure is considered a more appropriate indicator of journal quality than the total number of citations received since it discounts the greater citation potential of larger and more frequently published journals (Garfield, 1979). The 64 journals were also classified as "core" or "allied" education journals based on the subject matter category listings of the 1978 *SSCI, Journal Citation Reports*. "Core" journals were those listed under the Education and Educational Research, Educational Psychology, and Special Education categories; "allied" journals were those not included in the above categories. Most "allied" journals were in the fields of psychology and sociology.

The relationship between the Perceived Quality and the Citation Rate of the 64 education journals was examined by the Spearman rank order correlation coefficient (ρ). Separate coefficients were computed for the entire sample ($n = 678$), for each of the nine education specialty areas, and for "core" and "allied" education journals.

RESULTS

Table 1 includes the rank order correlation coefficients (ρ) between the Perceived Quality and Citation Rate of education journals for the entire sample and for each specialty area. Correlations are also shown for all journals ($n = 64$) and for those identified as "core" ($n = 31$) and "allied" ($n = 33$) education journals. The results for the entire sample show a statistically significant but modest correlation ($\rho = .21, p < .05$) between these two measures.

Of equal if not greater importance is the variability in this relationship be-

TABLE 1. Correlations (Spearman rho) Between Perceived Quality and Citation Rates of Education Journals

Education Specialty Areas	All Journals (<i>n</i> = 64)	Journal Type	
		Core (<i>n</i> = 31)	Allied (<i>n</i> = 33)
Counseling and Human Development (<i>n</i> = 66)	.43***	.52***	.45**
Measurement and Research Methodology (<i>n</i> = 154)	.24*	.36*	.43**
Learning & Instruction (<i>n</i> = 196)	.21*	.47**	.41**
Other (<i>n</i> = 17)	.16	.15	.49**
School Evaluation and Program Development (<i>n</i> = 53)	.08	.18	.48**
Social Context of Education (<i>n</i> = 39)	.19	-.01	.41**
Curriculum and Objectives (<i>n</i> = 67)	-.10	.13	.19
Administration (<i>n</i> = 78)	-.13	-.08	.14
History and Historiography (<i>n</i> = 8)	-.08	-.08	.04
Entire Sample (<i>n</i> = 678)	.21*	.33*	.52***

**p* < .05.
 ***p* < .01.
 ****p* < .001.

tween respondents in the nine specialty areas and between "core" and "allied" journals. There is a consistent positive relationship between the Perceived Quality and Citation Rate of education journals in three specialty areas (Counseling and Human Development, Measurement and Research Methodology, Learning and Instruction), a positive correlation for "allied" education journals alone in three specialty areas (Social Context of Education, School Evaluation and Program Development, Other), and no significant correlation for either "core" or "allied" journals in three specialty areas (Administration, Curriculum and Objectives, History and Historiography). The overall correlation between the Perceived Quality and Citation Rate measures is substantially greater for "allied" ($\rho = .52, p < .001$) than for "core" ($\rho = .33, p < .05$) education journals.

DISCUSSION

The results of this study indicate a much weaker overall relationship between the Perceived Quality and Citation Rate of education journals than has been reported in similar studies in psychology (White and White, 1977), sociology (Roche and Smith, 1978), and economics (McDonough, 1975).

While the overall correlation between these measures ($\rho = .21, p < .05$) was statistically significant, its practical value is marginal and cautions against the use of citation frequency as an "objective" measure of journal quality in the field of education.

The reasons for this condition are not discernible from the available data and warrant further study in order to determine the unique attributes of the field of education related to this finding. One possible reason for the weaker overall correlation is that the education journal literature contains a larger proportion of popular review and/or news-oriented journals than other disciplines in which a stronger relationship exists. Garfield (1972) noted that while "citation frequency reflects a journal's value and the use made of it . . . a popular review journal such as *Scientific American* or a news-oriented journal such as *New Scientist* may rank relatively low on a times-cited list . . . but that does not mean that they are therefore less important or less widely used than journals that are cited more frequently. It merely means that they are written and read primarily for some purpose other than the communication of original research findings" (p. 476). This possibility seems reasonable given the highly applied character of the field of education and the associated needs of keeping abreast of contemporary developments in school systems and communicating research results to school personnel in an understandable, nontechnical form.

An alternative explanation of the weak overall correlation is that education, as a field of inquiry, has a rather low level of paradigm development, which inhibits the development of consensus about such matters as the merits of quantitative versus qualitative research, the testing of theory versus the dissemination of useful educational techniques, etc. Such lack of consensus within the field might inhibit widespread agreement about the relative merit/quality of education journals.

The weak overall relationship between the Perceived Quality and Citation Rate of education journals tends to mask, however, wide variation in the specific strength of this relationship in different specialty areas in the field of education. There is general recognition that scientific specialty areas, rather than academic disciplines, are the primary structural units in science (Small, 1976; Garfield, 1979), and a recent study has demonstrated the distinctiveness of the nine education specialty areas included in the current study (Smart and McLaughlin, 1982).

There is a significant, positive relationship between these two measures for both "core" and "allied" journals in the Counseling and Human Development, Measurement and Research Methodology, and Learning and Instruction specialty areas and essentially no meaningful relationship between the measures for either "core" or "allied" journals in the History and Historiography, Administration, and Curriculum and Objectives specialty areas.

One possible explanation for this variability is that the former cluster of education specialty areas is closely linked with the field of psychology, which is one of the more mature social science disciplines. This interpretation would suggest a higher level of paradigm development in the former cluster, and thus greater consensus in terms of proper topics of study and methods to be used in their investigation (Kuhn, 1962). The latter cluster, however, is most closely linked to one of the less mature social science fields (i.e., political science) and one of the humanities (i.e., history), suggesting a lower level of consensus in terms of intellectual structure and social connectedness.

A significant, positive relationship between the Perceived Quality and Citation Rate of "allied," but not "core," journals exists in the School Evaluation and Program Development, Other, and Social Context of Education specialty areas. A possible explanation for this finding is that members of these specialty areas rely primarily on the "allied" education journal literature for the conduct of their research activities, while the "core" journals serve primarily other functional purposes (e.g., teaching and service activities).

The stronger relationship between the Perceived Quality and Citation Rate of "allied" than "core" education journals for the entire sample was contrary to initial expectations. This finding might result, however, from the more restricted knowledge and selective use of journals in related disciplines by educational researchers. It seems reasonable that they are not as familiar with the full spectrum of journals in other disciplines and that their knowledge is restricted to mainline, established journals. This restricted knowledge and subsequent selective use of established journals in related disciplines might have contributed to a stronger relationship between the two measures for "allied" education journals.

While the preceding interpretations are admittedly speculative in nature, the wide variation in the overall relationship between the Perceived Quality and Citation Rate of education journals has important implications for subsequent research on the validity of journal citation rates as an "objective" measure of journal quality. The findings of this study clearly question the advisability of generalizing the results obtained in research on one academic discipline to another field of study. Though the relationship between subjective judgments of journal quality and journal citation measures may be well established in other disciplines, this relationship is much weaker in the field of education.

Subsequent research on the relationship between such measures of journal quality should also be sensitive to the two sources of variation discovered in this study. The distribution of respondents among specialty areas of academic disciplines and the mix of journal types (e.g., "core" versus "allied"; research versus news-oriented) is likely to influence subsequent results. Further

research in this area is vitally important in efforts to develop systematic understanding of knowledge diffusion and utilization in science.

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NOTE

1. Variable names are capitalized throughout the manuscript.

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