

Quantity and Impact of Scholarly Journal Publication in Canadian Faculties of Education

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Le Current Index of Journals in Education (CIJE) fut utilisé des divers écrits de chacun des 568 professeurs adjoints dans les facultés anglo-canadiennes de pédagogie. Le Social Science Citation Index (SSCI) servit à évaluer pour chacun des professeurs-adjoints l'influence respective de tout article de portée intellectuelle, influence déterminée par le nombre de citations.

En fin de compte, les facultés furent classées selon une moyenne calculée d'après la fréquence et l'influence de leurs articles.

Des statistiques furent dressées pour sept universités de langue française. Toutefois, elles ne furent jamais publiées, car on eut conscience que le CIJE, pour utiliser l'abréviation anglaise, favorisait les publications d'expression anglaise aux dépens des articles français, qui, de ce fait, n'obtenaient que peu d'attention.

This study had two purposes. The first was to obtain approximations of the quantity and impact of scholarly journal publication among members of Canada's faculties of education. The second was to tentatively identify some Canadian faculties of education whose members might be particularly productive, and to provide two bases for making comparisons between faculties in terms of scholarly publishing.

At present there are few, if any, indexes of the nature and degree of scholarly publishing among members of Canadian faculties of education. Such indexes could provide empirical data for normative questions such as "Is there insufficient, adequate, or overmuch emphasis on scholarly publication among members of education faculties?" Some might argue that promotion procedures or institutional expectations create excessive pressures to "publish or perish" and detract from other professional duties, such as teaching. Others may argue that there is less journal publication among members of education faculties than should be expected from institutions of higher learning. Before normative questions can be answered, answers to simpler questions are needed. What percentage of faculty are in fact publishing in scholarly journals? What is the average number of articles published by faculty members across Canada in the last seven years? What impact upon fellow scholars do members from various faculties make?

Answers to these questions in the form of indexes might also provide a beginning for comparisons between faculties and a basis for subsequent analysis of possible reasons for the differences. Some administrators, faculty

members, and potential graduate students may wish to know how a particular faculty compares with other faculties across Canada. Graduate students interested in pursuing research-oriented masters' and doctoral programs might be able to use indexes of the quantity and quality of faculty members' scholarly publications as one measure of scholarly inquiry within a faculty. Such information could be of some help in deciding where to undertake study. Finally, these indexes might provide empirical starting points for further theory-based analyses of factors that might be associated with between-faculty differences. If there are differences between faculties, future research might be able to examine possible causes or correlates of scholarly publication, such as salary schedules, allocation of research assistants, allocation of load for research and writing, institutional expectations, ratio of graduate to undergraduate courses, and other possibilities.

Knowledge of current publication patterns might illuminate some of the discussion about faculty teaching loads and differential staffing. If part of the argument for decreased teaching-contact hours of professors (e.g. in comparison with high school teachers) rests on the assumption that professors spend more of their time on research and scholarly publication, then it could be useful to know the extent to which this research and scholarly publication does indeed occur. Moreover, if universities choose to initiate some type of differential staffing among faculty members, one of the options may well be a reduced teaching load for those who are heavily committed to research and publication. Knowledge of publishing patterns could be useful in establishing criteria for what constitutes sufficiently "heavy commitment" to justify teaching-load reduction. Data on publishing patterns could also indicate the relative number of professors who might opt for a teaching/research differentiated staffing option.

Knowledge of the amount of research and publication (or non-publication) conducted by current faculty members might also permit realistic examination of the dissertation requirement for doctoral students in education. Is the requirement to conduct original research, as a core element of a doctoral program, relevant to the future career patterns of these students? In other words, if professorial careers (let alone non-professorial, applied careers) allow an option which minimizes or excludes research and publication, might not a similar non-research (i.e. non-dissertation) option characterize preparation of future members of the professorate?

The scope of the present study is limited to providing an indicator of the extent of publishing and an indicator of the impact of publishing in certain Canadian faculties of education. It is further limited by methodological difficulties in obtaining a valid sample, and more particularly in obtaining valid, reliable indicators of publishing quantity and impact. For this reason, in the following sections, potential limitations will be described for (1) the sample, (2) the indicator of quantity, and (3) the indicator of impact.

LIMITATIONS AND DEFINITIONS

Sample of Faculties

The sample consisted of current associate professors from 22 English-speaking faculties of education that grant graduate degrees in education. Faculties granting a master's or doctoral degree in education were initially selected from *Universities and Colleges of Canada* (Statistics Canada, 1975). Suggestions for possible additions to the list were made by colleagues, particularly about faculties which had initiated a graduate degree in the past three years. The colleges were contacted by mail to verify their graduate-level programs. The most current catalogues available in the Canadian University catalogue section of the UBC library were then consulted, to obtain the names of faculty members. Faculties for which catalogues were outdated (i.e. prior to 1975/76 academic year) or unavailable were contacted directly by mail for a list of 1976/77 academic year faculty.

Junior colleges or colleges which granted only undergraduate degrees or teaching certificates were not included. This sample limitation was made for reasons of economy, but the choice is also defended on the assumption that the selection represented those faculties most likely to have members actively engaged in conducting and publishing research. According to this working assumption, faculties granting doctoral degrees would be most likely to contain scholars actively engaged in research and publication. (To guide candidates through the original research and production of a dissertation, it seems plausible that faculty should themselves be engaged in original research and scholarly production.) Faculties granting a master's degree were considered next most likely to include publishing scholars, then teacher-training faculties granting the bachelor's degree or teaching certificate, and lastly junior colleges. By choosing faculties granting the doctorate and faculties granting only the master's, it was possible to provide a partial confirmation of this working hypothesis (see "Results" below).

Six faculties in which French was the predominant language and one bilingual faculty were originally included but were later omitted from the reported analyses. They were omitted because it was felt that the indexes used were possibly unfair to scholars writing in languages other than English (see "Publication Quantity" below).

It is possible that some faculties or some members of some faculties were overlooked in the selection procedure. A strict interpretation of the data requires that the results be limited to the 22 faculties selected, but it is felt that the sample is reasonably representative, and that results might be generalized to English-speaking Canadian faculties of education in general. The 22 faculties of education were (in alphabetical order): Acadia, Alberta, Bishop's, British Columbia, Brock, Calgary, Concordia (Sir George Williams campus), Dalhousie, Manitoba, McGill, Memorial, Mount St. Vincent, New Brunswick, OISE (Toronto), Queen's, Regina, St. Francis Xavier, Saskatchewan, Simon Fraser, Victoria, Western Ontario, and Windsor.

Choice of Associate Professor Rank

For economic reasons, and because of the large size of many of the faculties of education (e.g. some with over 200 members), a sample of the total population of faculty members was desired. Several possibilities, including stratified sampling by ranks and institution, were considered. The rank of associate professors was chosen as a desirable representation of the population of those faculties selected. The associate rank is more suitable a sample than the lecturer or assistant rank because the associate professor has had an opportunity to establish a publication record. It is assumed that a majority of scholarly publications occur after the writer's doctorate is granted. Since most lecturers do not possess a doctoral degree, or are currently working on one, it is unlikely that they have had time to establish a publications record. Although an assistant professor may have obtained a doctoral degree, it is not unreasonable to expect that the first scholarly article will reach publication two or three years after completion of the doctoral program. Many assistant professors begin their first year of teaching at the rank of assistant immediately after completing the degree. They do well to prepare their dissertation for journal publication during this first, hectic year. It is likely that, given a publication lag of another year, their first articles will not appear until their third year of teaching. Assuming that an assistant professor stays in that rank for five years, it is likely that only the latter half of those years indicate his or her level of scholarly production. A publication count based on five to seven years could then underestimate the assistant professor's annual publication rate. In contrast, one can assume that the average associate professor may have had about seven years' experience since receiving the doctorate, during five years of which there may have been adequate opportunity for articles to appear in journals.

The associate rank was chosen also because tenure is frequently associated with this rank. A tenure decision is assumed to be more reflective of a faculty's attitude toward scholarly publication than the decision to hire an instructor or assistant. The instructor's or lecturer's may be a temporary position, such as that of a visiting public school teacher who will return to the schools. The assistant professor's represents a relatively short-term (usually about five years) commitment by the university. It is a trial period during which the faculty makes a judgment about a longer-term commitment, tenure. It is assumed that most associate professors have been judged by their respective faculties to be suitable for the longer-term needs of that faculty, and to possess a minimum level of what is judged to be important by that faculty.

The reasons for choosing associates over full professors are not as strong. First, it was felt that associate professors might reflect future trends in a faculty of education. They are likely to remain longer at the institution than full professors, who will likely retire sooner. Second, there was the

opinion, formed by personal observation and not substantiated by data, that there is a little more tendency to rest from scholarly publishing at the full-professor rank, and a tendency to work a little harder at scholarly publishing at the associate rank. Third, the journals which were searched for publications covered approximately seven years. Many early publications of full professors would likely be missed. The 1969–76 range of the CIJE was considered to mesh well with the probable average publishing period of current associate professors (8–9 years since doctoral degree, 6–7 years of publishing).

Publication Quantity

Publication quantity was defined as a count of journal publications, weighted for number of authors (see “Procedure” below). Publication counts have been used in other studies to describe the scholarly activity of groups and departments. For example, Nelson and Poley (1971) conducted a study of the publishing habits of Canadian psychologists and for 10 major psychology departments computed the average number of publications/individual/year. In the present study the average number of publications/individual over the preceding seven years was computed.

Scholarly Publication

For purposes of this study, scholarly publication was defined as any journal publication listed in *Current Index to Journals in Education* (CIJE) from its inception in 1969 to August 1976. Scholarly publication is intended to connote some type of referee system for submitted manuscripts, typically by a panel of colleagues expert in the specific area of the manuscript. CIJE is published by Educational Resources Information Clearinghouse (ERIC). CIJE abstracts educationally relevant articles from approximately 700 journals, mostly North American. Most of the journals are predominantly in the English language. The original analysis included scores for members of one bilingual and six French-speaking faculties. (Some French-speaking faculties do not distinguish the rank of associate, and in those cases all members were included.) Because of the dearth of French publications covered in the corpus, the publication counts of 97 members from the seven French-speaking faculties originally contained in the study were artificially low (0.15 publications per professor for the seven years) and were consequently omitted from further analysis.

The CIJE source journals include virtually all refereed Canadian journals such as *Alberta Journal of Educational Research*, *Alternatives*, *Canadian Counselor*, *Canadian Journal of Higher Education*, *Canadian Journal of Psychology*, *Canadian Vocational Journal*, *Curriculum Theory Network*, *Education Canada*, *Education of the Disadvantaged Child*, *Interchange*, *Journal of Educational Thought*, *Saskatchewan Journal of Educational Research and Development*, and *School Guidance Worker*.

Journals range from esoteric ones such as *Psychometrika* to popular ones such as *The Reading Teacher*. They range from philosophy to curriculum to psychology to practice, and encompass a wide range of scholarly inquiry. The rigor of refereeing procedures also varies. Many journals conform to high standards of refereeing (e.g. anonymous review by three or more experts) and high turn-down rates (80%–95%). Others have less rigorous refereeing procedures, and in some cases procedures that do not seem to be systematized in any formal manner. Because of the latter journals, “scholarly publication” is used in a very generous sense. The publication counts presented in this study would be somewhat lower if a more rigorous definition of “scholarly publication” were used.

The CIJE companion index, *Research in Education* (RIE), which contains “fugitive” literature (conference reports and other less accessible sources), was not used. It was felt that journal publications typically represent more rigorous and systematized refereeing procedures than those found in fugitive literature. It was also assumed that many of the better conference presentations eventually find their way into print. Published books were not used as a source, for economic reasons. It was felt that, generally, faculty members who publish scholarly books also publish in journal channels.

Publication Impact

For purposes of this study, impact was operationally defined as citation by others of one’s publications, recorded in the *Social Sciences Citation Index*. The SSCI is an international index which covers many of the education journals in CIJE plus a number of other journals in the social sciences. Using the citation index of the SSCI, it is possible to find, for a particular professor in a particular year, all the journal articles which cite any article or book which that professor has written. For example, the 1976 SSCI would list under Stendahl, J., all articles published in 1976 which referred to any article ever published by Jeremy Stendahl.

A citation count is felt to be an index of quality of publication, but whether impact assesses quality has been debated (Wiener, 1974). Citations should indicate to some extent the impact that an individual’s articles have had on the profession of education. An article which has an impact on other educational scholars will likely continue to be cited year after year, long after other articles have been forgotten.

The SSCI has recently been used by Buss (1976) to evaluate Canadian psychology departments. Buss is cautious about the use of the SSCI as a data source and provides several reasons for dissatisfaction. The same difficulties apply to the present study. One of the more difficult problems is that of correctly identifying the author. Each author is listed only by last name and first initial, and there is thus no direct way to distinguish Joanna

Smith from Jim Smith or Jeremy Smith. Secondly, the same author may be indexed more than once under the same name with a different list of citations of the author's work. Sometimes the repetition of an author's article appears with no apparent reason, yielding two citation lists for the same article. One of Buss's critics (Bavelas, 1976) points out that SSCI is biased against professors who change their name, particularly in the case of women who become married or re-marry. This is a valid criticism, and applies as well to the publication count. Bavelas also points out, correctly, that SSCI cites only references to the first (senior) author of a publication, thus underestimating citation counts of frequent second authors.

PROCEDURE

On the basis of the most currently available university calendars, all associate professors who appeared to be full-time members of the faculty were listed. An attempt was made to omit those considered to have borderline or temporary affiliation, such as visiting professors, or members whose primary affiliation appeared to be in another department or a special institute outside the faculty of education. Although an attempt was made to select all full-time faculty, some members may have been omitted inadvertently and other tangential personnel may have been included. Therefore, in a strict sense the associate professors should be considered a sample of the associate professors in a particular faculty. From the 22 faculties, 568 associate professors were identified.

Using the CIJE computer tape data base, a total publication count was obtained for each of the 568 associate professors. Borrowing from the terminology of FTE (Full-Time Equivalent) the number of FPE (Full-Publication Equivalents) for each associate professor was computed by a specially designed computer program. Each publication was considered one FPE. If there was a sole author, the author received one FPE for the article. If there were two authors, each received $\frac{1}{2}$ FPE. Ideally, if there were three or more authors each would receive $\frac{1}{3}$. However, CIJE refers to each article having three or more authors with first author's name "and others." To avoid a cumbersome separate reference check for each "and others" citation, a compromise measure was used. The first author of an "and others" publication was given $\frac{1}{2}$ FPE, and the remaining authors were not identified. This procedure tends to increase the first author's FPE count, but this is not completely undesirable since the first author is often the major author of an article.

Although the FPE were computed by the program, a hand search was used to verify the proper identification of the associate professor. Unlike the SSCI, the CIJE base provides the entire name as it appeared in an article, such as Jonathan William Smith, Jr. Hand verification was needed because authors publish under slightly different titles, even apart from

marital name changes. Thus Jonathan Smith, Jonathan Smith, Jr., J. W. Smith, Jonathan W. Smith, are all different names that could be easily identified by hand. Actual name changes could not be detected.

A frequency distribution of Full Publication Equivalents of all 568 associate professors is presented in table 1. The mean FPE was 1.17, with a standard deviation of 1.98.

Table 1 / Full Publication Equivalents (FPE) in Journals for 568 Associate Professors in Canadian Faculties of Education

FPE	Number of Associate Professors	Cumulative Percentile
0.0	285	50%
0.5	41	57%
1.0	90	73%
1.5	21	77%
2.0	42	84%
2.5/3	28	89%
3.5/4	19	93%
4.5/5	13	95%
5.5-6.5	14	97%
7-9.5	11	99%
9-17	4	99+ %

Note: Publications are those listed for the period 1969-Sept. 1976 for current members of English-speaking faculties.

In a related study (Arlin, 1977) it was found that the CIJE tends to underestimate FPE for several reasons, one of which is relevant to the present analysis. The CIJE omits authors other than the first from publications containing three or more authors. In the Arlin (1977) study, the entire CIJE was found to contain 10.4% publications by 3 or more authors. Since each of these publications was given .5 FPE another .5 remained unaccounted for, or 5.2% of the total FPE. Assuming (generously) that most of the omitted authors were Canadian associate professors then the FPE would be underestimated by about 5%. Allowing another 5% for miscellaneous error, such as coding mistakes, hand verification mistakes, and actual name changes, the FPE may be underestimated by approximately 10%. Based on this estimate, the true sample mean may be closer to 1.3 FPE per professor. In the Arlin study, total publications (with no differential between single- and multiple-authored publications) were related to FPE by a factor of 1.23:1.00. Converting the present figures to total publications yields a figure of 1.44 or, adjusting by the 10% underestimate, 1.6 publications per associate professor.

Citation counts were obtained by hand checking all 283 professors who had a publication count greater than 0. It is possible that a person without

any listed publications in CIJE could have some work cited, but it seems quite unlikely. An approximately 3-year period — 1974, 1975, and the first two thirds of 1976 — was chosen. (At the time of the hand search the complete 1976 summary book was not yet available.) Earlier it was stated that a few years' lag time might be expected before the first publication. A further period of several years can be expected for citations — one or more years for the article to make an impact and another one or more years for subsequent authors' articles to appear in print referring to the original article. Since the average number of years in rank of the associate professor was assumed to be about 7 or 8, the most current three or four years would be most likely the years in which the author was most heavily cited. Each citation exclusive of self-citation (an author's reference to one of his/her earlier works) was given a score of 1 and was summed across the 2½-year period. As in Buss's (1976) study, self-citations were not felt to be indicative of an author's impact upon others in the field. The frequency distribution of citations made to associate professors during the period is presented in table 2.

Table 2 / Number of Citations for 568 Associate Professors in Canadian Faculties of Education

Citations	Number of Associate Professors	Cumulative Percentile
0	419	74%
1	46	82%
2	24	86%
3	18	89%
4	17	92%
5	10	94%
6-7	11	96%
8-10	10	98%
11-13	7	99%
14-26	6	99+%

Note: Citations are those listed during period 1974-mid-1976 for current members of English-speaking faculties.

The distribution for the citation counts was even more positively skewed than for the publication counts. Only 26% of the professors were cited as first author. Of course, in an absolute sense this figure cannot be compared to the 50% figure for FPE, since the citation time span was shorter. The mean citation count for the 2½-year period was 1.13, with a standard deviation of 3.06.

A composite index was computed for each associate professor in an attempt to give equal weight to both quantity and impact.

It was considered necessary to use some measure of quality to avoid an emphasis upon quantity. Quantity of publications in itself may not be

desirable, and may even be deleterious by contributing to the proliferation of questionable articles within the field of education. In the Arlin (1977) study, it was hypothesized that a curvilinear relationship between quantity and quality (as operationalized by impact) may exist. Up to a point, a scholar who produces an increasing number of articles will make an increasing impact upon colleagues. The Arlin study presents results showing, for example, that scholars who published only one article in the past eight years have significantly less impact per article upon their colleagues than scholars who published five or more. However, after a certain point, so much attention may be paid to “grinding out” articles that insufficient thought, care, and deliberation are given to each, so that quality and impact decrease. For example, one of the most prolific authors in the Arlin study had an FPE of 41 over the past eight years but had only one article cited, and that was cited only one time. Few scholars would consider a large number of questionable articles to be desirable. Unfortunately, considerations of publications in promotion committees, and studies like the present one, can degenerate into discussions merely of quantity. It is suggested that such discussions try to take account of qualitative dimensions, by using some type of composite index such as the one used here.

Because of the non-normality of the distributions, z-scores were not used in the present study. Rather, each professor’s publication count was divided by the mean publication count and each citation count was divided by the mean of the citation count. (Even this metric is distorted by non-normality.) The resulting average scores were thus 1 for each measure, but the standard deviations were different for each, reflecting the initial differences in distribution shapes. The means and standard deviations were 1.00–1.69 for publications and 1.00–2.66 for citations. The composite index of quantity and impact had a mean of 1.00 and a standard deviation of 1.84. An examination of the standard deviations reveals some of the difficulty in arriving at a composite index which would reflect both a quantitative and a qualitative aspect of scholarly journal publishing.

Having computed a composite index for each of the 568 associate professors in the sample, averages were then computed per member per faculty. All faculties were ranked, but since a purpose of the study was to provide some rough identification of those faculties with high journal productivity and impact, only the seven highest faculties are presented in table 3. Each faculty had a composite index above (or close to) 1.0. In order to be listed, it was necessary for a faculty to contain at least 5 members. Otherwise a publication count might be more reflective of a particular individual or individuals than reflective of an educational faculty as a whole. Even the criterion of five members raises some questions of interpretation for small faculties. For example, Concordia’s composite index is largely due to one scholar who accounted for 4 out of their 9

publications and almost all (6/7) of their citations. The percentage of faculty with no listed CIJE publications is also presented, to facilitate assessment of the extent to which the FPE represents a typical productivity level of the faculty, or an effort by a relatively small number of faculty members. The faculties were ranked in order of the composite index, and the ranking is presented in table 3.

Table 3 / Rank Ordering of Canadian Faculties of Education Based on Composite Index of Journal Publications (FPE) and Citations of Associate Professors

Rank	Name	Composite Index	FPE/ Assoc. Prof.	Citations/ Assoc. Prof.	% Without Publication	Number Sampled
1	OISE ^a	2.2	1.95	3.10	27%	79
2	Br. Columbia	1.45	1.51	1.82	46%	68
3	Victoria	1.23	1.27	1.56	54%	39
4	Concordia ^b	1.16	1.50	1.17	33%	6
5	Alberta	1.06	1.55	0.90	32%	69
6	Simon Fraser	1.01	1.42	0.92	33%	12
7	Calgary	0.93	1.24	0.91	43%	42
	Other 15	0.43	0.68	0.38	65%	253
	TOTAL	1.00	1.17	1.32	50%	568

Note: Faculties with 5 or fewer associate professors or with a composite index of 0.50 or lower are not ranked separately.

^aOntario Institute for Studies in Education (affiliated with University of Toronto).

^bSir George Williams campus.

Finally, as a partial check on the working assumption that faculty productivity is related to the highest degree offered, faculties granting doctoral degrees were compared with those granting only the master's. Faculties granting doctoral degrees as listed by Statistics Canada (1975) were: Alberta, British Columbia, Calgary, Manitoba, McGill, OISE, and University of Victoria; all the rest were master's level faculties. The doctorate-granting faculties had a significantly higher FPE average (1.31) than the master's-granting faculties (0.86), $t(566) = 2.49$, $p < .05$. Similarly, the doctorate-granting institutions had a much higher citation average (1.43) than master's-granting institutions (.46), $t(566) = 3.52$, $p < .05$. These results would have been even more clear-cut, except for two anomalies. McGill, a doctorate-granting institution, was not among the top seven institutions listed in table 3, whereas Simon Fraser, which does not grant the doctorate, is among the top seven. Otherwise all the top institutions listed in table 3 are doctorate-granting institutions. (Results are also significant with faculties as the unit of analysis.)

DISCUSSION

One of the problems of presenting materials in tabular form is that information tends to acquire a pseudo-scientific reality. Before any of these data are taken more seriously than the methodology allows, the weaknesses of the present approach, described in the first part of the article, should be kept in mind.

Assuming that there is a modest degree of reliability and validity in these figures, what meaning can be attached to them? One of the first observations is the high percentage (approximately half) of associate professors who have no publications recorded in the vast corpus of CIJE. Apparently "publish or perish" has not inhibited some faculty of education members from advancing in their careers. In a practical, professional field such as education, it can be argued that professional advancement should be possible through avenues such as excellence in teaching, service to the community, and curriculum development. However, it is not clear that dual-option systems have been clearly articulated as faculty policies. The traditional university-wide option, in addition to good teaching, requires scholarly publication, at least at the level of articles published in journals represented in the CIJE corpus. A second and as yet not clearly articulated option for advancement may be professional excellence indexed by such factors as teaching involving time and preparation above average expectations, curricular innovations, community service, committee work, and administration. Such criteria are being and have been used (obviously, in the case of the 50% non-publishers). But, at present, one has the impression that many people are judged on their scholarly publications, whether they wish to pursue this aspect of professional education or not.

It is assumed for purposes of this paper that few members of the educational profession disagree with the priority of teaching ability as a major criterion in either option, and thus the choice is not between teaching and research. Although the research option may involve less time for teaching (see "Differential Staffing" below) it has no room for the stereotype of the high-powered researcher who is incapable of communicating with students. Both options presuppose good teaching, but allow differentiation beyond this criterion (i.e. research or other avenues).

The data from faculties granting the doctoral degree can be considered in light of the dissertation they require of doctoral candidates. In her comprehensive review of the role of the dissertation in universities in general and in faculties of education in particular, Jeroski (Note 1) establishes that virtually all North American colleges of education require a dissertation for either the Ed.D. or Ph.D. She examines Canadian faculties of education graduate calendars and consistently finds that they require the doctoral candidate to conduct *original* research and scholarship in the dissertation. An earlier report by Robertson (1971) on doctoral requirements in Canadian faculties of education indicated that the

dissertation was the heart of the program. All else, such as course work or internships, were subsidiary to the dissertation, and were to some extent merely the necessary steps in preparing to do original dissertation research.

There is no doubt about the appropriateness of dissertations for preparing scholars in the field of education who wish to pursue careers of original research and for the publishing which shares this research with other scholars. It seems ironic that this kind of preparation is required of everyone, although many doctoral students will rarely if ever do any more original research leading to scholarly publication. Many will pursue careers in field-based positions such as superintendencies, or in clinical positions which frequently do not permit sufficient time for research and publication. Even individuals who pursue teaching careers in Canadian faculties of education, and who may have time available for original research, often are not so inclined. As the present results show, fully 50% of associate professors have no publications recorded in CIJE. Admittedly, those not publishing may not have completed the doctoral degree, but certainly the non-publishers include as well many who have completed their doctoral dissertation. Even in faculties granting the doctorate, where a large number of associate professors hold the doctoral degree, 47% (41% omitting McGill) have no listed publications in the CIJE corpus.

Assume that an FPE of at least 2 over the past 8 years is necessary to indicate a serious commitment to research and scholarly publication. (This is a generous interpretation of "serious commitment.") The criterion is set purposely low to accommodate those scholars who spend a large portion of their scholarly efforts in practical, applied areas, such as local curriculum research and evaluation. Many of their "publications" may be in the form of technical reports. However, given the large corpus of the CIJE covering applied and practical aspects of education (including ways of training teachers, ideas on how to teach reading, suggestions for conducting in-service training, etc.) it is reasonable to expect a few of the results to be published for a wider audience than readers of the technical report. It is conceivable, but probably not too common, for a scholar to be actively committed to original research culminating in technical reports, but not to have published at least 2 FPE in the 700 journals of the CIJE during the past 8 years. By this criterion, only about 26% of associate professors on faculties granting the doctorate are pursuing careers committed to research scholarship. (In non-doctoral faculties the figure is less than 15%.) Indeed, at the top-ranked institute in table 3 (OISE), where the focus is on graduate training and there is no undergraduate teacher training, only 34% of associate professors meet the criterion of career commitment to research. And yet we require a dissertation of all students, when such a product seems to relate closely to the future careers of only 10%–20% of them.

Perhaps we should consider more carefully the distinction between the

Ed.D. and the Ph.D. The Ph.D. could be the avenue for future research scholars, with emphasis on the dissertation as preparation for future original research. Instead of requiring a “watered down” dissertation for the Ed.D., perhaps the dissertation requirement could be eliminated, and other requirements (such as internships, advanced coursework, practica, curriculum development projects) substituted for the dissertation. Ideally, this could be done without the academic tendency to consider professional degrees of lower status than the Ph.D. In medicine, for example, the M.D. is not a “watered down” version of the Ph.D., but a professional degree respected in its own right.

The data may also be viewed in the framework of a controversial issue, the allocation of load for research purposes and differentiated staffing. One of the criteria underlying the allocation of teaching loads to university professors has been the assumption that the professor needs considerable time to advance the discipline by scholarly activities, particularly research. Part of the disparity between a public high school teacher’s load and the university professor’s is undoubtedly based on the more advanced nature of the subject and the additional time required for course preparation and for keeping abreast of current developments in the discipline. But some of the disparity is based on the expectation that the university professor will create new ideas or conduct research and communicate with academic colleagues through such channels as journal publications, in addition to communicating with his students.

The public high school teacher or community college professor is expected to communicate with his students with minimal expectation for journal publication. Assuming that the previously stipulated criterion of “greater than 2 journal FPE since 1969” indicates a “heavy” commitment to research or scholarly publication, then approximately 23% of associate professors should have their teaching loads reduced on the basis of this criterion. This is not to say that journal publication is the *only* criterion to be used for teaching load reduction. It may, however, be a rough indicator of a *minimum* level of productivity, for use in arguments for load reduction on the basis of research activity. The word “minimum” is used advisedly. It is difficult to see why a scholar could not easily produce two FPE over a period of eight years, even with teaching schedules heavier than those currently assigned. A more rigorous expectation of performance, for each year a scholar is granted time off from teaching for the express purpose of conducting original research, may be some type of documentation of the results for colleagues, typically in the form of a published report. Of course there are exceptions, such as scholars working on major longitudinal projects, but even here interim reports or publications are feasible. Few (2%) Canadian associate professors are currently producing at this level. Few (9%) are producing at even half this level (one FPE every two years). However, it is suspected that the argument of time for research and

scholarly publication may be used to justify a reduction in load for more than 9% of the associate professors in Canada. Conversely, it could be asked whether or not the teaching loads of the 9% of scholars who have published more than four FPE since 1969 are any different from those of colleagues who have chosen not to pursue this approach to scholarly activity.

Finally, some implications of faculty rankings can be discussed. It must be kept in mind that the present rankings in no way imply a unitary evaluation of a faculty. Many factors are not considered, such as quality of teaching, service, and other types of publications (such as books and curricular materials). The ranking represents only one aspect of scholarly publications. If two types of career paths were legitimized, it might be possible to rank faculties of education on scholarly publication on the basis of the part of the faculty engaged in such activity (in graduate faculties). Likewise, other indices might be used to evaluate other aspects of a faculty, on the basis of members engaged in the activities. Whether this alternate route (with a de-emphasis on scholarly publication) is openly advocated or not, it appears to have been successfully chosen by at least 50%–75% (between 0 and 2 FPE) of associate professors. These publication patterns, one must assume, are sanctioned by the various faculties which have granted tenure to these associate professors, and can to some extent represent institutional expectations.

Recognizing that the rankings do not purport to evaluate all aspects of a faculty of education, what comparisons can be made between faculties? Given the small differences between some faculties it might be better to consider clusters of faculties as tied ranks. On either the composite, quantity, or impact criterion, there is little doubt about OISE's top-ranked position. It emerges as clearly higher than other faculties. However, the ranking of the next four faculties can be debated. One of the more debatable positions is that of fourth-ranked Alberta. It is second in number of publications, but only sixth in citations, for a composite ranking of fourth. Another consideration in ranking might be consistency and extremities, or the extent to which the average score is typical of the faculty in general or represents the contribution of one or two outstanding scholars. An approximate indication of consistency can be derived from the number of associate professors who have not published anything listed in CIJE. As mentioned, Concordia's rank is largely due to one member who had an above-average number of publications and an above-average number of citations. This was sufficient to have a large effect on the average of a small faculty. The University of Victoria has a very large proportion (54%) of unpublished (according to CIJE) associate professors. Part of Victoria's score is a result of one associate professor with an above-average number of publications and one of the highest citation counts in the entire sample. This individual accounted for 25 out of Victoria's 61 citations. A similar situation exists at UBC, although there is more than one individual who

raises the overall average. In these three faculties, small numbers of faculty (or just one faculty member) increase that faculty's average considerably beyond what might be considered generally typical of the faculty. If consistency and extreme cases were computed into a composite index, the ranking would probably be: (1) OISE, (2) Alberta, (3) Simon Fraser, (4) British Columbia, (5) Calgary, (6) Victoria, (7) Concordia. It is left to the reader to determine what relative emphasis should be given to each of publications, citations, and consistency. Depending upon one's emphasis, the relative rankings will differ.

It may be informative to compare the figures obtained in this study with productivity indexes of other fields or other countries. In a recent study, Thompson and Mitchell (1976) counted Canadian contributions to publications in 19 leading business administration journals throughout North America. For the 1970-74 period they found an average of .7 publications per faculty member at the five most productive schools. Their index is based on a much smaller corpus than the CIJE, and the authors stated that had they extended the corpus to, for example, management journals, the output would have been much higher. They also found that on the basis of their figures, the top three Canadian schools (Toronto, British Columbia, and York) outsourced the three highest of the U.S. schools included in their sample (Texas, Pennsylvania, and Indiana). The present author is currently conducting a study of publication quantity and quality among North American schools of education. Preliminary data suggest that OISE is the only Canadian faculty ranking among the top 50 North American faculties of education. If these results hold under more thorough analysis, it may be suggested that Canadian professional schools of education do not compare as favorably on scholarly productivity with their U.S. counterparts as do Canadian professional schools of business administration.

A comparison of scholarly productivity between faculties of education and Canadian academic departments of psychology is possible, thanks to Buss's (1976) recent article. Buss computed articles/person in psychology departments for a 2½-year period. Adjusted for a period comparable to the 7-year period of the present study, his data yield an average of 8.4 articles per person in the top five institutions. In terms of FPE this is approximately 6.8 FPE per person in the top five, and compares with 1.5 FPE per person in the top five ranked faculties of education. Part of the reason for the discrepancy may be found in the difference between academic departments and professional departments. Time allocations and work requirements may be more conducive to publication in academic departments such as psychology than they are in faculties of education.

Several directions can be suggested for further research. First, both ranks

of professors, full and associate, should be included. A comparison between the two ranks might be informative. For example, a faculty where the full professors are stronger than the associate professors could be indicative of a faculty which is "resting on its laurels" and is slipping in scholarly productivity. Alternatively, a school in which the associate professors are considerably stronger than the full professors, might indicate an "up and coming" faculty in terms of scholarly productivity. Second, future researchers with adequate resources might profit from obtaining all names under which faculty have published. Third, future researchers might wish to obtain identities of "others" in "and others" citations, from sources other than CIJE. Finally, future researchers might wish to build upon the present primarily descriptive study by integrating rankings into a more theoretical framework. Once an acceptable ranking is obtained, then potentially correlated variables — such as faculty salary, proportion of graduate classes, faculty teaching load, and so forth — can be investigated. For example, to explore the relationship between degree of emphasis on undergraduate teaching duties (classroom teaching, student teaching, supervision, etc.) a future study could include those faculties which do not conduct graduate courses. Additionally, types of salary schedules could be explored. Some faculties have salary ceilings for assistant professors which correspond to the minimum for associates. In faculties such as OISE which have overlapping salary ranges between ranks, there may be less faculty pressure for rapid promotion, and associate professors might have, on average, more years in rank than is typical.

These suggestions only touch the surface of the many possibilities for further inquiry. Future researchers will undoubtedly be able to ask new and potentially more fruitful questions about the nature of scholarly publication in Canadian faculties of education, and to use techniques which will overcome some of the limitations inherent in the present study.

SUMMARY

This study attempted a description of the quantity and impact of scholarly journal publication in Canadian faculties of education. For 568 associate professors, a publication count was obtained from the CIJE reference of 700+ educational journals. The average full publication equivalent was 1.3 (adjusted upward) over an almost 8-year span, 1969–76. Approximately half of the associate professors had no publication or part-publication listed in the CIJE corpus. Additionally, citations were counted for each associate professor during a recent $2\frac{2}{3}$ -year period. The published works of 26% of faculty members were cited one or more times, with an average citation rate of 1.1. Implications of these results are discussed for such areas as teaching loads, non-research career options, and the dissertation require-

ment for doctoral students. Finally, seven of the more productive faculties were given a ranking based on a composite index of quantity and impact of publications.

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