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SPECIAL FEATURES / CONTRIBUTIONS SPÉCIALES

Teaching and Learning in Higher Education in Canada: Changes over the Last Decade

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The development of awareness of the teaching and learning process in postsecondary education has a mottled history in Canada. Generally, at the university level, responsibility for learning is assigned to students rather than professors or the university itself. This highly reasonable perspective has had the effect of limiting investigation into postsecondary teaching and learning processes. The university assumes that its students are selected on the basis of their capability to learn. The university further expects that its professors are experts in their fields. Being an expert in one's field, however, does not ensure that one possesses an overview or consciousness of how one's discipline is organized. Indeed, doubt exists in some quarters as to whether a discipline can be organized or perceived. In such an environment the instruction process could not be expected to garner great attention. This view is reflected in a recent report on the reform of education in the United States. Universities are described as striving "to hire highly qualified academic specialists, who know their subjects well and do distinguished research. But few of these specialists know how to teach well, and many seem not to care. The undergraduate education that intending teachers – and everyone else – receives is full of the same bad teaching that litters American high schools" (The Holmes Group, 1986, p. 16).

In response to this situation, the members of the Holmes Group, a distinguished panel of Deans of Education in American research universities, recommended that universities take steps to strengthen education in academic subjects. The first step is to sharply revise the undergraduate curriculum so that students will study with instructors who understand the pedagogy of their material. The second step is to organize academic course requirements and courses so that students "gain a sense of the intellectual structure and boundaries of their disciplines, rather than taking a series of disjointed, prematurely specialized fragments." Although this report was written with the well-being of education students in mind, its recommendations merit consideration in any discipline. A responsibility has been declared for professors of all disciplines to be aware of the conceptual framework within which their discipline operates and to be able to portray this framework to their students.

What does this mean for those in higher education concerned with the improvement of university instruction? In the past there has been a tendency for

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those working in instructional development and coming, for the most part, from a background in psychology, to focus on the process of instruction. The report of the Holmes Group suggests that it is time to consider working much more closely with professors in specific disciplines to link process and content. The intent of this paper is to examine the role of instructional development units in Canadian universities over the last ten years. A comparison between the directions which the units might take to link process and content on the way to producing optimally conceptualized instruction.

Ten years ago

Instructional development units in Canada have evolved from groups with more goals than activities, to centres or services which provide organized assistance and expertise to the university campus. A 1975–76 survey of pedagogical services in Canadian colleges and universities provides a baseline for measuring this evolution (Donald & Shore, 1976). The survey was done in order to establish what centres and offices existed to promote the improvement of learning and teaching, and to open channels of communication among the people involved in this work. At that time, 22 universities replied. All regions of the country were represented, with the more populated areas of the country showing a concentration of services, either by an instructional development person, unit, or committee. For example, seven of nine universities in Quebec (78%) and nine of thirteen universities (69%) in Ontario replied. Six universities (24%) outside central Canada use services, two in the east and four in the west. A variety of people had responsibility for the services, including vice-presidents, deans, chiefs of staff development, coordinators of research and experimentation, directors of institutional research, counsellors, and committees on instructional development.

The first unit was established in 1960 at York University in Toronto. It had a centre for counselling and development which was student-oriented but included a program on the development of teaching skills and effectiveness. In the 21 other universities replying, eleven had services established from 1966 to 1975, and the remaining ten had university committees in place. Three of the units served medical education. Most services and committees were mandated to provide help to new teachers, often in the form of workshops and continuing group discussions. Where centres or services were established, the number and kinds of activities were noticeably greater than where committees existed. Although committees had an equally great propensity to issue newsletters and to do surveys of campus needs, the services were more likely to have libraries or documentation centres, to do evaluations, and to publish. Only two universities awarded grants for innovative teaching projects. Only one university had a program to aid graduate students, and one had a computer project. No university gave awards for excellence in teaching at this time. The identification and rewarding of good teaching was a goal mentioned by two of the colleges replying to the 1976 survey, but not by any university.

Ten years ago, therefore, there were 22 universities which had taken steps to establish either a committee or a teaching improvement service. The most frequently found activity was the provision of workshops, although only 13 of the universities reported this as an activity. Research was the second most frequently reported activity. Research activities included studies such as the feasibility of developing instructional materials using video-cassette equipment for delivery to small groups, research on course evaluation and on individualized instruction, an analysis of the needs for teacher improvement in the region, and studies of student applicants and graduates. Thus the nature of the research was applied and varied; it included studies of media, of students, and of the instructional process. It often consisted of establishing what the needs of professors and students were, thus being exploratory in nature. Funded research, that is from granting agencies, was rare. The statements of goals of the services and committees far exceeded the statements of activities and accomplishments, suggesting the early stage of development of the field.

The current situation

Changes in teaching improvement activities since 1976 are subtle; they appear to be qualitative rather than quantitative. No direct and coherent way of identifying if a greater proportion of faculty was affected could be found. The measurement of activities has not yet been meaningfully quantified. Some of the changes that have occurred in Canadian universities from 1976 to 1986 suggest development but others are puzzling. One could hypothesize that the budget cuts suffered by Canadian universities in the eighties limited the development of university services. The 1986 information is the result of an international study of university pedagogy (Donald, 1986a). Letters were sent to 56 Canadian universities which asked them for information about programs and literature on research, methods, experiences and practices concerning university pedagogy. Replies were received from 44 universities, and of these, 30 universities could be described as having active, though for the most part informal, programs. Informal programs would include occasional workshops or meetings rather than formal pedagogical weeks, courses or an evaluation system. Pedagogical activities were limited to workshops in four of the responding universities. Thus the total number of programs had not increased substantially over the decade, although the half-way mark had been passed, moving from thirty-nine per cent to fifty-four. Of the 30 universities with active programs, 20 had been part of the 1976 study. Replies were not received from two universities in the earlier study, suggesting that university machinery might be creaky rather than that the services no longer exist. The limited increase in the number of universities providing faculty development services in Canada closely parallels the experience in the United States over the last two decades (Eble & McKeachle, 1986).

Less than half the universities in Canada (26) reported having specifically designated committees or services in place. Nine universities had both committees

and services, an increase of eight from the previous decade. It appears that a division of responsibilities had occurred so that committees had, for the most part, become advisory in nature, and the services provided to professors or students had become institutionalized in service unit or centres. In 1986, the services and centres appeared to be as innovative as they had been a decade ago, but the innovations were in the form of special projects undertaken by staff in addition to their service responsibilities or in the form of funded research.

The number of libraries had increased from five to thirteen, the number of institutions publishing documents from nine to thirteen, and the number of newsletters from eight to thirteen (Figure 1). One could say, therefore, that documentation had increased at a faster pace than the creation of new pedagogical improvement units. Workshops, seminars and courses had increased in substantial numbers. Thirteen units had been providing workshops or seminars in 1976; 27 were engaged in 1986. But perhaps the greatest change in the provision of instruction in pedagogy was for graduate students. In 1976, one university had instituted a program which prepared graduate teaching assistants to teach; now there are ten. Five graduate programs for the study of higher education were reported where before there had been none. The number of universities providing the opportunity for consultations or evaluations had on the other hand increased very little, each from eight in 1976 to ten in 1986. Could this be due to the greater cost of individual consultations or does it represent a change in direction for the services? In any case, instruction in pedagogy had formalized over the decade, more closely matching the expected university format with the provision of courses, programs, and documentation.

University teaching appears to have been professionalized in another use. Awards given for teaching excellence were reported in six universities in three provinces in 1986 compared with none reported in 1976. Grants for teaching improvement are made in nine universities compared with two a decade ago. Within the Ontario university system, the Council of Faculty Associations gives Ontario-wide teaching excellence awards. Ontario universities also host the annual meeting of the Society for Teaching and Learning in Higher Education. The recognition of excellent teaching and the provision of financial support for teaching innovations may improve the status of university teaching relative to research. If teaching is to be improved, this is important in an era when research has come to dominate the life of the university, partly because it is a way of attracting needed funds in addition to government financing. Perhaps a more important reason for the primacy of research is that the university sees for itself a critical role as the creator of new knowledge in the knowledge society.

What kind of research is being done in university pedagogy? Ten years ago, interest in comparing teaching methods, in individualized instruction, and in the use of media was foremost. In the 1986 survey, eight universities replied that their services were engaged in computer projects, and for two of them, computerized learning was the principal activity of the service. Several of the services do responsive research, that is, research for development projects to meet identified

needs, surveys of faculty needs, and special projects on teaching and learning in higher education. One service publishes a review of research and innovations in teaching, and another is currently engaged in a funded research study of pedagogical services. One university centre actively seeks research funds for projects from outside the university. This is possible because centre staff are members of faculty rather than administration. In other universities, faculty members who have an interest in pedagogy serve on the university committee but also do research on the teaching and learning process.

The universities network in several ways. For example, in 1983, a pan-Canadian conference on the evaluation and improvement of university teaching was held, co-sponsored by the Canadian Society for the Study of Higher Education and the Canadian Psychological Association, and supported financially by the Social Sciences and Humanities Research Council of Canada (Donald & Sullivan, 1983). Seventy representatives from Canadian universities took part in the three day conference. Seven of the main speakers at the conference, all professors from Canadian universities, then collaborated in the production of a book entitled *Using Research to Improve Teaching* in the New Directions for Teaching and Learning series (Donald & Sullivan, 1986). In this book the researchers discuss their theories and the results of their recent research on teaching and learning. Directions for future research are considered at three levels. The role of educational institutions in providing the optimum context for learning is an area little researched but of increasing importance. Different kinds of research on teaching are needed, and research on the learning process and the development of intellectual skills is still in its infancy. In a project funded by the Canadian Higher Education Research Network, and which began in February 1986, 15 Canadian university professors are using computer conferencing to discuss different aspects of student learning in the university. The topics include Influences on learning; entry levels of students; the assessment of learning; motivation; and university education and the workplace. Much of the research on university pedagogy is, therefore, done by professors who have an interest in university pedagogy but are not necessarily members of a service or centre.

In perspective

Pedagogical service or centre personnel, let alone universities as a whole, appear to be far from a conscious awareness of the conceptual frameworks of the disciplines which are said to be needed for teaching university students. There is no proof that professors are able to portray such frameworks for their students. Over the last ten years, pedagogical awareness has developed in the form of workshops or courses which suggest better instructional practice. What has not yet evolved, however, is a strategy for developing conceptual frameworks for understanding the learning task in a particular discipline or course. Much has been learned about the instructional process from the innovative methods of teaching that have been tested. For example, from evaluations of individualized instruction,

it has been found that students need an overall framework in which to locate their studies; or from audio-visual courses, students appear to still require contact with a mentor or trouble-shooter.

In a study of faculty development practices in the United States done at the time of the first Canadian survey, Centra (1976) found that professors rated instructional assistance practices, particularly assistance in course development, second in effectiveness only to grants and travel funds. Eble & McKeachie (1986) found instructional development activities most effective in comparison with other faculty development activities. Professors, therefore, tend to value this kind of work. The results of the 1986 survey suggest that to date teaching committees and services have focused on the development of basic instructional skills, such as how to give a lecture or evaluate fairly. Sullivan (1986) describes this kind of faculty development practice as "remedial" rather than "facilitative" or "optimizing". He also points out that the more advanced types of teaching improvement emphasize learning rather than teaching.

Evaluations of faculty teaching effectiveness depend for their validity on how much or how well students have learned. This can be determined only when the learning task of the student is known. What would have to be done to understand what that task is? What is the most appropriate role for pedagogical service personnel to take in the description and portrayal of the learning task in a discipline? How does the teaching process link with the learning task? Early studies of the learning task in the university focussed on methods used to represent knowledge structures (Donald, 1983). In the beginning of the study, the quarry was a unit of analysis, or measurement, of thinking, so the smallest units, the concepts found in individual courses across disciplines were studied. The work was primarily descriptive: what concepts professors considered important in courses which they taught, and what methods could be used to describe these concepts. A study of the extent to which the concepts could be used to predict student learning showed, for example, that knowledge of important course concepts at the beginning of the course predicted course achievement in the social sciences better than grade point average, although it did not predict as well in the natural sciences and humanities. The use of propositions, that is, statements relating concepts in courses was examined and their meaning and importance to professors (experts) in the discipline and to students was studied. The analysis of propositions added a level of complexity because relationships among the concepts had to be determined in addition to the meaning of concepts themselves.

Work with the professors of these courses led to a shift in focus. When professors were asked what they considered important for students to learn, they replied in terms of skills, such as analysis and synthesis, that they would like their students to acquire. A search of the literature on the skills considered important in postsecondary education uncovered skills in critical thinking, problem solving, creativity, and metacognition. These skills were analyzed and compared and a model of intellectual skills was developed which could then be tested in university

courses (Donald, 1985). How the intellectual skills related to knowledge structures was a mystery, however.

To answer this question, the focus was broadened to the question of what constitutes a discipline, because knowledge structures and intellectual skills interact within and are determined by discipline (Donald, 1986b). Disciplines have been said to differ in their logical structure, the criteria for judging the truth of propositions, and the methods used to produce propositions (Alder, 1982; Hirst, 1974; Scheffler, 1965). These characteristics are reflected in the relationships between concepts in courses and in propositions, and in the intellectual skills, particularly verification skills, used in the discipline. It could be supposed, then, that the learning task of the student in a course could be portrayed by a conceptualization of the concepts and propositions and their relationships, and the intellectual skills important in the course. Knowledge structures have been described as the nouns and intellectual skills as the verbs of learning (Olson, 1976; Salomon, 1986). The challenge is to put them together in meaningful sentences.

What role should university teaching centres be playing in the delineation of the learning task? The research shows that professors consider work with pedagogical experts on course development to be a highly effective form of faculty development. It is evident that subject matter experts and instructional developers need to work together to analyze and conceptualize what learning should occur in a course. Where before course objectives and learning experiences have been used to describe the learning task, additional methods are needed to refine what the expectations of learning in any course will be. This is labor intensive work. Larger projects such as the curriculum revision of programs are undoubtedly more difficult and time consuming than the more focussed projects which described teaching methods. A longer time line would be necessary to devote the needed attention to conceptualize and portray learning, and to test different methods of organizing instruction to reflect the essential and variable skills and knowledge structures that constitute a course.

This paper closes with the hypothesis that intensive studies of the learning task will have the most far-reaching and long-term effects. Instructional development centres can provide professors with documentation and research literature, can give short workshops and slightly longer courses on new methods, and can provide grants and awards to enhance the status of teaching in the university. But attending to the learning task and developing an expertise in the components and relationships that define learning in a course or program stand to yield greater knowledge about effective teaching.

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