

THE FACILITATION AND HINDRANCE OF SCHOLARLY ACTIVITY  
AS REPORTED BY THE UNIVERSITY OF BRITISH COLUMBIA  
EDUCATION FACULTY MEMBERS

by

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## ABSTRACT

This study was concerned with developing and exploring a reasonably comprehensive scheme of categories which describes, from the perspective of The University of British Columbia education faculty members, what facilitates and hinders their scholarly activity.

The Critical Incident Technique was used to elicit 547 incidents from forty-one faculty members. These incidents were categorized in three separate ways: according to who facilitated and hindered (the reported responsible agent or agency), to what facilitated and hindered (the reported action of the agent or agency), and to the phase of scholarly activity that was reported facilitated or hindered. Six agent or agency, twenty-three action, and six phase categories were identified. An examination of the action categories themselves revealed that they could be grouped under the superordinate categories: direct, enable, and motivate. An examination of the frequency of reported incidents in categories permitted the identification of relationships among agent or agency, phase, and action categories. Several types of evidence provided support for the reliability and validity of the category schemes.

From an examination of the findings as a whole, six conclusions were drawn. First, not all action categories

are relevant for every person, project or phase. Second, not all agent or agency categories are involved to a noticeable extent with every action category. Third, the action categories are interrelated. Fourth, the action categories are bipolar in the sense that each actually does contain or may plausibly be said to contain both facilitating and hindering events. Fifth, the action categories happen or could happen as part of everyday university life. Sixth, there is evidence to suggest that the action categories are useful.

Future studies might: 1) undertake further studies which will more fully explore and validate the action categories; 2) determine to what extent the action category scheme applies to other faculties of education and other faculties; 3) use alternative methods to confirm relationships among action, agent or agency and phase categories; 4) examine how the action category scheme is affected by diverse types of change; and 5) determine how an administrator can best accomplish the task of motivating, enabling, and directing scholarly activity.

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## CHAPTER 1

### INTRODUCTION

#### BACKGROUND OF THE STUDY

Canadian and American university administrators currently face limitations on the availability of new faculty positions and on faculty mobility (Bean, 1982; Bowen, 1982; Konrad, 1983).

Voluntary attrition among faculty with the Ph.D has dropped from about 8 percent in the mid-sixties to about 1 percent currently . . . . The modal age of tenured faculty, now two-thirds of the full time work force, is 36-45, with relatively few faculty over age 55. The bulge of faculty between 33 and 47 will be with us until the first decade of the next century and perhaps beyond should there be another upward revision of the mandatory retirement age (Chait and Gueths, 1981:30).

As a consequence, universities in the next decade will have to depend on their current faculty members to provide new views and to shape future educational climates (Brookes and German, 1983; Gaff, 1975; Morrill and Spees, 1982). The challenge facing university administrators, then, is to help the current professoriate maintain its vitality and contributions.

Administrators are attempting to meet this challenge with faculty development programs (Bean, 1982; Brookes and German, 1983; Gaff, 1975; Gaff et al., 1978; Group for Human Development, 1974; Mayhew, 1979; Morrill and Spees, 1982; Simerly, 1977). According to Nelson (1979:142), faculty development:

. . . concerns itself with a broad range of activities designed to improve faculty performance in all aspects of their professional lives - as teachers, scholars, and contributors to institutional decisions.

The present study focused on one aspect of faculty development, namely scholarly activity, for two reasons. First, scholarly activity is a very important professorial role, traditionally accepted as one of the core functions of higher education (Morrill and Spees, 1982). The influence of such activity is summarized by Fulton and Trow (1974:30):

Despite the fact that it is not carried on by all academics, nor even encouraged in all institutions, its influence is felt in every academic institution, both through its effect on growth of knowledge (and thus on the content of higher education everywhere), and through its role in providing the basis of institutional prestige.

In recent years, scholarly activity has become an increasingly important responsibility for professors in many institutions. Blackburn et al. (1980:46) noted in their study that "all institutions expect more time to be given to scholarship than faculty now give. Furthermore, faculty want to give more effort to this activity, even more than

the institution expects." The value of scholarly activity is also continually reinforced by departmental and university committees, who use evidence of such activity as the key criterion for awarding tenure and promotion (Morrill and Spees, 1982).

Second, limited information is currently available to administrators attempting to help faculty members perform scholarly activity. To date, a great deal of the research on scholarly activity has focused on organizational or institutional and personal or professional characteristics. As Finkelstein (1982:1) noted:

. . . Investigators have sought to locate determinants . . . on the one hand, at the macro level in the organizational characteristics of a professor's current institutional affiliation or doctoral institution and in his/her disciplinary affiliation, and, on the other, at the individual level, in terms of professional and personal characteristics.

Research has shown, in a number of ways, that the location of academics' work is associated with scholarly productivity (Blackburn and Havighurst, 1979; Blackburn et al., 1978; Crane, 1965; Fulton and Trow, 1974; Long, 1978). Faculty at some colleges and universities produce more than faculty at others (Blackburn, 1979). An institution's research emphasis will influence the scholarly productivity of its faculty (Blau, 1973; Fulton and Trow, 1974), as will its reputation or prestige (Blau, 1973; Blackburn et al., 1978; Long, 1978) and its size (Blau, 1973; Price, 1968; Rushton and Meltzer, 1979).

As for personal and professional characteristics, personal interest in research has been cited as an important factor in scholarly productivity (Babchuk and Bates, 1962; Behymer and Blackburn, 1975; Blackburn et al., 1978). Other factors include academic rank (Behymer and Blackburn, 1975; Blackburn et al., 1978) and early career publications (Blackburn and Havighurst, 1979; Lightfield, 1971; Clemente, 1973). In addition, a relationship between age and scholarly productivity has established a saddle-shaped curve (i.e., a rise, a fall, then a rise) of productivity for several disciplines (Blackburn et al., 1978; Pelz and Andrews, 1966).

While these investigations account for some variation in publication rate (the most commonly used indicator of scholarly activity), the information does not serve as a useful guide for administrators because many of the factors are not amenable to change. For example, administrators cannot change the personalities of existing faculty members or whether they published early in their career. Administrators can, however, try to develop a climate within which scholarly activity is facilitated (Fielden and Lockwood, 1973). To do this they need information on what facilitates and hinders faculty members' scholarly activity.

Previous studies provide some evidence as to what can be used by administrators to facilitate scholarly activity — time, rewards, resources, collegueship, and freedom have all been studied in this context. However, these categories must be seen as only partially helpful solutions to the problem of the facilitation of faculty members' scholarly activity, since a comprehensive scheme of categories has not yet emerged from the studies. First, the research did not attempt a comprehensive description of what facilitates and hinders scholarly activity. Second, most researchers pre-selected factors for study rather than seeking to discover the full range of factors that are relevant to scholarly activity. Third, previous research offered a piecemeal approach in which units of investigation proved difficult to integrate and build further investigations on. Fourth, most research was concerned with products rather than process. What is needed is a reasonably comprehensive scheme of categories, which describe what facilitates and hinders faculty members' scholarly activity.

For several reasons, it would seem desirable that the categories should describe what facilitates and hinders scholarly activity from the perspective of faculty members themselves. First, there appears not to be a systematic description from the perspective of faculty members themselves. Second, faculty members are largely free to

direct their own scholarly activities, which can be very individualistic and private. For instance, most faculty members carry out some aspect of scholarly activity in their homes. Third, it is only faculty members who are in a position to know the full context and the role events play within that context to facilitate and hinder scholarly activity. For example, a librarian might provide reference materials, but never see how or if they were used to make a research proposal.

With a reasonably comprehensive scheme of categories, which describe from the perspective of faculty members, what facilitates and hinders their scholarly activity, administrators would potentially have a better basis to develop a climate within which scholarly activity is facilitated. Future research and the conceptualization of faculty development concerned with scholarly activity might have a more informed basis.

## PURPOSE AND SIGNIFICANCE OF THE STUDY

### Purpose

This study was concerned with developing and exploring a reasonably comprehensive scheme of categories which describes, from the perspective of faculty members, what facilitates and hinders their scholarly activity. This study used The University of British Columbia (UBC) Faculty

of Education for the investigation because the population was accessible and because scholarly activity has become a more stressed priority among professorial roles in this faculty (Birch, 1982).

The research question for this study was: What do The University of British Columbia education faculty members report as facilitating and hindering their scholarly activity?

### Significance of the Study

This study was concerned with the first and most basic step in the study of faculty development regarding scholarly activity. A category scheme was inductively developed which describes what facilitates and hinders scholarly activity from the perspective of professors themselves. The value of the category scheme is that it offers a reasonably comprehensive basis for the conceptualization of faculty development and for the administration of faculty development programs concerned with scholarly activity. Previous research has been valuable in showing that a particular factor or set of factors can influence scholarly activity. This research offers a broad frame of reference capable of integrating past research and suggesting a more holistic approach to what facilitates and hinders faculty members' scholarly activity.

The research also offers some guidance on how the category scheme could be used in the conceptualization of faculty development and in the administration of faculty development programs concerned with scholarly activity. The results offer a basis for future research which might more fully explore and validate the categories and relationships among the categories.

#### DELIMITATIONS AND LIMITATIONS

The results of this study apply specifically to The University of British Columbia Faculty of Education. However, as will be discussed in Chapter 3, what applies to the Faculty of Education at The University of British Columbia is apt to apply to a greater or lesser extent to other universities' faculties of education. Future studies will be necessary to determine the general applicability and the limitations of the findings of this study.

There are clear limits on this study. While the present work was intended to identify factors in general, which administrators can use to help professors perform scholarly activity, the study focused more on external factors that facilitate or hinder, rather than as reported earlier, on internal factors (professional characteristics or intrinsic motivation) for several reasons. First, administrators are responsible for the climate within which

scholarly activity takes place and external factors are more readily accessible to administrative policies and decisions. Second, there is evidence that research climates have important repercussions on research activity (Fielden and Lockwood, 1973). Because this study focused primarily on external factors, it must be understood that the factors that help faculty members perform scholarly activity will be qualified by the nature (e.g., personal and professional characteristics) of those being helped and cannot be expected to account fully for scholarly activity.

Another limitation to this study is that the categories derive from self-report, and are therefore subject to the limitations of self-report. While there is support for the categories (e.g., judgmental analysis), further studies are required, which will more fully explore and validate the categories and the relationships among the categories.

#### OVERVIEW OF THE STUDY

An introduction, including the background of the study, a description of the purpose, the research question, the main areas of significance, and delimitations and limitations have been provided in Chapter 1. In Chapter 2, the literature relevant to what facilitates and hinders faculty members' scholarly activity is reviewed and critiqued.

In Chapter 3, the research design is discussed: specifically, the population and sample, the Critical Incident Technique, the pilot study, the interview procedures, the method of recording and extracting incidents, and the way in which the data were analyzed.

The findings are presented in Chapters 4, 5, and 6. The category schemes are described in Chapter 4. The preliminary exploration of relationships among categories is undertaken in Chapter 5. Issues such as reliability and validity are discussed in Chapter 6.

A summary, conclusions and implications, and recommendations for further research are outlined in Chapter 7, the concluding chapter.

## CHAPTER 2

## REVIEW OF THE LITERATURE

The literature relevant to what facilitates and hinders faculty members' scholarly activity is reviewed in this chapter. The major studies of the field have been large-scale projects involving numerous variables and sometimes numerous smaller studies. Rather than review each study separately, an attempt has been made to provide a provisional categorization of the findings. Hence, this review is organized on the basis of major categories of factors which appear to facilitate or hinder faculty members' scholarly activity. A critique of the literature concludes the chapter.

CATEGORIES OF FACTORS WHICH APPEAR TO FACILITATE AND HINDER  
FACULTY MEMBERS' SCHOLARLY ACTIVITY

A review of the relevant literature suggests that the major categories are time, rewards, resources, collegueship, and freedom.

Time

Simerly (1973) conducted an open-ended interview with five percent of the faculty at The University of Tennessee, Knoxville to determine faculty perceptions of

their growth and development in professorial roles. Faculty reported that inadequate time hindered their overall growth and development.

Edward Sheffield's (1982) review of the state of research on postsecondary education in Canada also reported lack of time as a hindering factor to research. In this investigation, questionnaires were sent to senior Canadian officials of organizations (e.g., universities, research councils, government departments of education) and individuals (e.g., professors) who engaged in research on aspects of postsecondary education. "For those on university faculties for whom research is a part-time activity, the chief impediment was lack of time" (Sheffield, 1982:51).

Konrad's (1983:24) survey on the "nature and effectiveness of faculty development practices in Canadian universities" also referred to time. Konrad used a modified Centra (1976) instrument to survey thirty Canadian universities reporting that they had activities or a program for faculty development. Where there was a practice of temporarily reducing teaching load, sixty-seven percent of the respondents regarded load reduction to work on a research area (or a new course or a major course revision) as being effective or very effective. Sixty-one percent reported sabbatical leaves as being effective or very effective.

## Rewards

Extrinsic rewards. These are rewards extrinsic to the work itself. Salary increment or merit raise, promotion to a higher rank, and career options (e.g., administrative positions, outside consulting) are three forms of extrinsic rewards available to faculty members (Tuckman, 1979).

Blau (1973) undertook a comparative study of 115 American universities and colleges. Information was obtained from three sources (interviews with the central administration of the universities, American Council of Education's American Universities and Colleges - 10th Edition, and survey results from 2577 faculty members) to analyze fifty-seven institutional characteristics, including salaries. Using a regression analysis, Blau reported a relationship between higher salaries and the emphasis placed on research, which was measured by research involvement, research obligations, and weight of research for tenure decisions.

Tuckman (1979) selected faculty members who were engaged in teaching, research, public service, and administration in twenty-two fields from a 1972-73 American Council on Education's national survey to examine rewards. A regression coefficient was used to determine the effects on salaries of engaging in article and book publication. Tuckman (1979:169) found that "rewards to those with a large

number of articles swamp those to faculty engaged in virtually any other activity." Using a multivariate technique to estimate probability of promotion to the ranks of associate and full professor, article publication was also found to have an affect on the probability of promotion.

Recognition is another form of extrinsic reward. Crane (1965) noted that motivation for scientific work at major universities seemed to be based on a "desire for more general scientific recognition," as compared to institutional rewards for researchers at state universities. Cole and Cole (1967:377) in a study of 120 physicists found that recognition (awards, appointment to top academic departments, and having one's research known in the community of physicists) "operates to encourage creative scientists to be highly productive."

Allison and Stewart (1974:596) reported that "the highly skewed distributions of productivity among scientists can be partly explained by a process of accumulative advantage." This idea of accumulative advantage "can be viewed as consisting of two feedback loops in which recognition and resources are intervening variables" (Allison and Stewart, 1974:597). Using this as the framework for the study, the authors "found that the fit between scientists' resources, productivity, and esteem improves over the career course" (1974:605).

Fenker (1977:453) developed a method for comparing an institution's incentive structure with a variety of weighted work-related behaviors faculty are expected to perform. The method was used in a case study of one university to ascertain the importance of incentives and the perceived relationship between teaching and research and the likelihood of receiving incentives. The results indicated that a number of incentives are important to faculty. Sabbatical or merit leave of absence were rated as very important, as were promotions, tenure, and salary increases. However, certain non-monetary awards (e.g., recognition for research excellence) also received high ratings. Based on these results, Fenker concluded that the universities should recognize non-economic incentives, such as recognition awards, especially in periods of restraint.

Freeman (1979) analyzed the features of the academic job market and suggested another form of extrinsic rewards. He indicated that the allocation of laboratory space, supplies, and assistants could be used to compensate faculty for lack of equity in salaries.

Intrinsic rewards. Pelz and Andrews (1966) examined intrinsic and extrinsic rewards as one of several conditions within a researcher's environment or orientation to the environment that accompanied a high or low level performance. They obtained information from 1311 scientists

and engineers, including 144 university professors, through two forms of a questionnaire. Performance measures were obtained in two ways: 1) work evaluations by a researcher's supervisors and peers, and 2) a researcher's self-report for five years of the number of papers, patents, and reports produced.

Within Pelz and Andrews' study, intrinsic rewards included opportunities to use skills, gain new knowledge, deal with challenging problems, and be free to follow up one's own ideas. Extrinsic rewards referred to a good salary, organizational status, and scientific prestige. The authors found that the provision of status rewards was associated with achievement, as were intrinsic rewards. However, based on other results showing a strong relationship between researchers who relied on inner sources of motivation and performance, the authors suggested that:

. . . the research director must give close attention to the whole system of rewards — both intrinsic and extrinsic. He must live with the paradox that extrinsic rewards cannot be relied on to motivate achievement, but that when achievement occurs, the extrinsic rewards should be consistent. And possibly the very provision of them will stimulate further achievement (Pelz and Andrews, 1966:139).

Marsh and Stafford (1967:752) also supported the importance of intrinsic rewards by reporting that "academicians choose work activities such as teaching and basic research (rather than sales or supervision) that have, in economic terms a large 'consumption component' for them."

That is, the academicians regard the enjoyment of their professional activities as a substitute for money.

### Resources

Meltzer (1956) found that the provision of funds was positively related to scientific output. Interestingly, in the summary and conclusion, the author broadened the meaning of funds to include all the material aids to productivity — equipment, assistants, space, and the like.

Doctoral work by Thorpe (1970) also indicated the importance of resources. His dissertation focused on the nature, role and significance of those involved in the administration of research. He conducted structured interviews with 198 professors from the University of Missouri-Columbia, who were engaged in the conduct or the administration of research. The sample consisted of researchers with grant support of \$5000 or more, chairmen of departments which emphasize research, and directors of university research centres. Contingency analysis and Kendall's rank correlation were used to test twenty-one variables in the researcher-administrator relationship against "satisfaction with administrator." These tests revealed several strong associations including the "extent to which the administrator attempted to reward the faculty member for his work." Other associations involved "the extent to which the administrator would 'go to bat' for

researcher" and "the extent to which the administrator is helpful in providing resources."

Blau (1973) obtained a product-moment correlation of .43 between the clerical-faculty ratio and research productivity (number of articles, plus five times the number of books authored or coauthored). Allison and Stewart (1974) also reported a positive relationship between resources and productivity. In this study, the authors measured resources by the Gini Index of the number of research assistants and the proportion of faculty members who indicated they "always" receive the grants they seek.

Two Canadian reports concerned with increasing research capacity argued for more resources. Andrews and Rogers (1981) coordinated a review for the Canadian Society for the Study of Education. This review, based on reports from ten sub-divisions of education, provided the Social Sciences and Humanities Research Council of Canada (SSHRC) with a description of the nature of the field of study of education, and the nature of research in education. The review made recommendations for increasing Canadian research in education through changes in SSHRC's funding policies and procedures (Andrews and Rogers, 1981:1-2). Specifically, nine recommendations were made for increasing research capacity. Included were special funds for retraining and reorientation fellowships, seed money, research time stipends, formation of research teams and

institutes, travel, conference sponsorship, and assistance to research journals. Several similar recommendations were also made to SSHRCC by the Canadian Association of Deans of Education. Based on results from a questionnaire sent to thirty-eight deans of education and a series of interviews with twenty-four deans, the association recommended that seed money be provided "to inexperienced researchers to enable them to establish a research track record" (Canadian Association of Deans of Education, 1982:31); additional funding was also recommended for fellowships, retraining grants and residential training sessions. These recommendations were "aimed at increasing the capacity of our existing faculty members" (Canadian Association of Deans of Education, 1982:31).

### Colleagueship

The literature indicated that professional interaction is important to scholarly productivity.

Blau (1973:112-113) found that "the colleague climate exerts a pronounced influence on the research involvement of individuals." He noted how the extensive

. . . research conducted by the faculties at major universities creates an academic climate that stimulates and facilitates the research involvement of new faculty members, at the same time putting normative pressures on them to engage in research (Blau, 1973:241).

DeVries (1975:111) studied sources of influence over 290 faculty members at the University of Illinois (Champaign-Urbana campus). The author reported that "the departmental colleagues' expectations [the average importance assigned to a role by the faculty members' department] predict significantly role behaviors for the research role only."

Braxton (1983) examined whether departmental publication productivity has a positive relationship with individual publication productivity. His research demonstrated that there is a relationship but that it is dependent upon the level of prior publication:

. . . departmental colleagues tend to stimulate or repress to a modest degree the level of current research activity of individual faculty members whose prior level of research role performance is low, but have little or no effect upon the level of current research activity of those individual academics who have engaged in the research role at a high level of prior performance (Braxton, 1983:125)

The literature (e.g., Pelz and Andrews, 1966; Cameron, 1978) also indicated that professional interaction entailed communication and sponsorship and mentorship.

Communication. Behymer and Blackburn (1975), using data collected by the Carnegie Commission and the American Council on Education, examined twenty-two variables related to productivity. Their data indicated that the variable

"frequent communication with colleagues at other institutions" is a better predictor of productivity than "perceived publication pressure."

Pelz and Andrews (1966:39) found that scientists who tended to show high scientific performance "spent considerably more time communicating with their colleagues than was typical for their group." Also, the number of people with whom a researcher exchanged information was associated with number of scientific products. Blackburn et al.'s (1978) "communication with scholars at other institutions" variable correlated with research productivity.

Finklestein (1982) examined collegueship with two macro variables, institutional type and disciplinary affiliation, and two individual characteristics, faculty orientation to teaching versus research and career age. Based on individual interviews, a questionnaire was developed that listed thirty functions that colleagues performed. The faculty members were asked to indicate whether the different functions were being fulfilled by departmental colleagues, campus colleagues, and off-campus colleagues. Using a factor analysis, several needs factors were identified; help in research was one of the factors. This factor included such functions as critical feedback on professional writing, co-authorship, help in generating and testing ideas for research, collaboration, and consultation on special problems.

Sponsorship and mentorship. Cameron (1978) examined the relationship between sponsorship and scholarly success. Sponsorship included such dimensions as financial support, publication support, personal encouragement, placement in first job, work on faculty research projects, dissertation funding, and collaboration with senior faculty on first or second publication. Scholarly success was measured by the rate of productivity, grants received, rate of collaboration by years since Ph.D., and involvement in publisher/professional associations' networks. The study surveyed faculty members from the disciplines of english, sociology, and psychology and found that: 1) the type of institution (research university rather than a comprehensive university) was related to the scholarly success measures, and that 2) academic field and early collaboration with senior faculty are the strongest predictors of rate of collaboration.

Reskin (1979:129) examined the first ten years of the careers of a group of chemists and reported that "sponsorship appears to play a vital role in the chemists' careers." Specifically, "being trained by a productive sponsor and collaborating with one's sponsor during graduate school were both associated with greater predoctoral productivity" (Reskin, 1979:142).

Blackburn et al. (1981:325) studied the experiences of mentors. The authors reported a significant correlation between mentor's scholarly productivity and the degree of collaboration in research and writing with others. The study concluded with the suggestion that:

. . . the mentor-protégé relationship is a symbiotic partnership. The stature and accomplishments of the mentor are important to both the academic productivity and advancement of the protégé. At the same time, to be seen as a successful protégé by a distinguished mentor implies following a career path very much like that of the mentor (Blackburn et al., 1981:325-326).

### Freedom

Meltzer(1956) found that freedom to choose one's own research problem without demands from above was correlated with productivity. However, the factor of freedom was not sufficient by itself. Financial support is also required.

Andrews did additional work (1976), studying social and psychological factors to determine if they affected the creative process. Data were obtained from 115 directors of research projects. The directors completed questionnaires which were concerned with conditions in their laboratories (e.g., information on hurdles and the process by which they were overcome), submitted a final research report (which was rated for innovativeness and productivity), and completed the Mednicks' Remote Associates Test (1962), as a measure of creative ability. One finding regarding the role of the

administrative superior lends further support to the importance of freedom. "Project directors whose administrative supervisors 'stayed out of the way' — at least with respect to the actual conduct of the research — were the scientists who tended to obtain higher payoff from their creative abilities" (Andrews, 1976:351).

Specifically, creative ability and innovation were found to be positively correlated with a diminished involvement of the supervisor in research design, allocation of funds, and hiring of personnel. In his conclusion, Andrews was careful to note that the results should not be interpreted to mean that supervisors have no role to play:

Recall, first, that all the respondents were directors of their own projects. Presumably they were reasonably competent scientists with at least some administrative experience. The appropriate role for the administrative superior of a person at this level may involve encouragement, facilitation, friendly criticism, and administration of the laboratory, rather than close involvement with details of others' research (Andrews, 1976:351-352).

#### CRITIQUE

Most of the research up to the present time can be regarded as attempts to identify the significant factors that might affect scholarly activity. Essentially, researchers have attempted to map the terrain broadly (e.g., Thorpe, 1970) or to confirm the importance of single factors

(e.g., Braxton, 1983; Tuckman, 1979). Of a number of possible research approaches, several seem not to have been used. For example, there is a lack of experimental research designs among the studies reviewed. As yet, no one has, for instance, given one group of professors more time for scholarly activity while holding time constant for another group. No one has extended rewards for scholarly activity for one group while holding rewards constant for another group. There are prohibitive practical and ethical difficulties in conducting this type of research, but also, the general tenor of investigations suggests it is premature. The guiding premise seems to be that if enough factors are studied, a comprehensive answer to the question of what facilitates or hinders scholarly activity will emerge. With a more adequate map (i.e., a comprehensive scheme of categories), future studies and the conceptualization of faculty development concerned with scholarly activity might have a more informed basis. Administrators would have a more adequate basis for developing a climate within which scholarly activity is facilitated. Programs for faculty development concerned with scholarly activity could be designed in a more effective manner. Accordingly, the aim of this critique is to examine why a more comprehensive map has not yet emerged. An answer to this question can supply a basis for designing a study that does establish a more comprehensive basis for

future research, and for the conceptualization of faculty development and for the administration of faculty development programs concerned with scholarly activity.

First, most research does not attempt a comprehensive description of what facilitates and hinders scholarly activity. Rather, researchers have sought to contribute to a comprehensive description by investigating a single factor or a small set of factors. For example, Simerly (1973) studied time. Tuckman (1979) studied rewards. Cameron (1978) studied sponsorship. Finkelstein (1982) studied collegueship and Blackburn et. al. (1981) studied mentorship. The adequacy of confirmation involved in these studies varies considerably. Simerly's study employed an open-ended interview to gain opinions. Similarly, many of the questionnaire surveys (Fenker, 1977; Thorpe, 1970; Canadian Association of Deans of Education, 1982; Sheffield, 1982) ask for direct opinions on what facilitated or hindered scholarly output. Other studies use objective indices. For example, Blau (1973) used indices of clerical support and research productivity. DeVries (1975) used Administrative Data Files as a measure of organizational expectations for research. Thorpe (1970) developed an "Index of Scientific Contribution" to use in his investigation of the appropriate role of the academic research administrator. However, the quality of these investigations is not at issue here. The point is, rather,

when researchers focus upon single factors or a small set of factors, a comprehensive description is less likely to emerge, than when a systematic design is used to achieve comprehensiveness.

Second, most researchers pre-select factors for study rather than seek to discover the full range of factors that are relevant to scholarly activity. In broad studies employing many factors, there is an attempt to be thorough in including important aspects. Pelz and Andrew's (1966) are notable in this regard. In preparation for their study, they interviewed scholars to determine relevant variables. Upon the basis of these interviews and their own views, they developed two questionnaires, items of which were to be correlated with two indices of research productivity. However, even in this study, there is no warrant for believing these interviews were systematic and thorough enough to capture the full range of relevant factors. Other omnibus studies (e.g., Behymer and Blackburn, 1975; Blau, 1973) similarly lacked any basis for claiming that their samples of variables reflected the whole population of factors. The reliability of measures in these studies is generally within an acceptable range and these studies are valuable in showing the relationship of many factors to scholarly productivity. However, they are inadequately grounded for claiming a comprehensive description of what facilitates and hinders faculty members' scholarly activity.

Third, for the purposes of a coherent and comprehensive description, isolated studies of one or a small number of factors seem inadequate. The factors used in these studies referred to different (and hitherto uncomparing) facets of scholarly activity. For example, some researchers stress agents, who facilitate or hinder research (e.g., Braxton, 1983), while other researchers stress what what it is that facilitates research (e.g., Cole and Cole, 1967). As a collection, previous research offers a piecemeal approach to the generation of a comprehensive description in which units of investigation prove difficult to integrate and build further investigations on.

Fourth, most research has been concerned with products rather than process. In most cases (e.g., Allison and Stewart, 1974; Blau, 1973; Blackburn et. al., 1981; Braxton, 1983; Cameron, 1978; DeVries, 1975; Meltzer, 1956; Pelz and Andrews, 1966; Thorpe, 1970; Tuckman, 1979), the dependent variable is research productivity, how much was done rather than how it was done. There are two problems with this focus. From an administrative perspective, the first problem is that it leaves one ignorant of the steps, phases, or process of doing scholarly activity. Scholarly activity is not a single entity, but rather might be seen to involve a complex set of steps such as getting an idea, getting access to data, conducting research, and reporting it, among other things. To facilitate scholarly activity

and to minimize hindrances, it would be desirable administratively to know what factors are important for what steps. A second problem is that to consider scholarly productivity is different from considering the question of what facilitates or hinders scholarly activity. For example, consider two members of a department, one who is productive and one who is not. The administrator's task in this case, is to facilitate the scholarly activity of both, and to do this, he or she requires more basic information about how scholarly activity is facilitated. By learning how to facilitate scholarly activity, productivity might be improved, but an immediate focus upon productivity can lead to a neglect of basic conditions. In the studies cited in this chapter, certain scholars were low or medium in productivity, but they still did scholarly activity. A basic question is therefore what facilitated or hindered their conduct of scholarly activity.

The shortcomings of previous research can be important in considering the design of alternative approaches. The key issues seem to be the following.

Instead of concentrating upon a single factor or a small set of factors, it would be desirable to try to develop a comprehensive list of factors.

Rather than pre-select factors, it would be desirable to use a method whose very purpose is to discover what range of factors are involved.

It would be desirable to regard scholarly activity as a complex set of steps, each of which might be facilitated or hindered, rather than a single entity.

It would be desirable to focus more on individual faculty members rather than groups, since what facilitates or hinders scholarly activity is apt to vary from person to person. Even what is prominent for a person at a time might vary over time. A uniform effect cannot be assumed and a research method which takes individual perspectives into account seems advantageous.

The present study was designed to incorporate these features. The design is described in the following chapter.

## CHAPTER 3

## RESEARCH DESIGN

In this chapter, the research design is presented for this study, whose purpose was: 1) to develop a reasonably comprehensive scheme of categories which describes, from the perspective of faculty members, what facilitates and hinders their scholarly activity; and 2) to undertake a preliminary exploration of relationships among categories in order to gain a more complete picture of the scheme of categories. The population and sample are delineated. The way in which the data were collected, including the Critical Incident Technique, the pilot study, the interview procedures, and the method of recording and extracting incidents are also discussed. A review of the way in which the data were analyzed and an introduction to questions of reliability and validity conclude the chapter.

## POPULATION AND SAMPLE

Population

The study was restricted to full-time faculty members at the assistant, associate, and full professor ranks in the Faculty of Education at The University of British Columbia. The advantages of using one faculty

rather than a broad selection of faculties and universities are several. First, the population is accessible. Second, the use of one faculty is intended to describe at least one situation well. With one well-described situation, researchers can then determine applicability to other situations. In contrast, in a broad general description involving a number of faculties and universities, it would be difficult to determine the extent to which any particular situation was described. Third, there is the possibility of immediate practical benefit. Scholarly activity is a heavily stressed priority among professorial activities within the Faculty of Education at The University of British Columbia. The dean has stated that one goal for departments is "to provide scholarly leadership in the fields represented in its membership" (Birch, 1982). This stated direction provides considerable impetus to plans for promoting scholarly activity, which the results of this study might assist.

This investigation used the Faculty of Education at The University of British Columbia and has the strongest assurance of applicability in this one faculty. However, the more general population (i.e., target population) is faculties of education across universities. It seems reasonable to assume that the Faculty of Education at The University of British Columbia is not unique and that what applies to this university applies to some other education

faculties. For example, the Faculty of Education at The University of British Columbia stands in the same position to granting agencies as do other education faculties. Its organizational structure with a dean, departments, secretaries, computer facilities, and bureaucratic agencies, is similar to that of other faculties. There is an emphasis on scholarly activity at The University of British Columbia, and such an emphasis has been found to correlate with scholarly productivity (Blau, 1973; Fulton and Trow, 1974). Also, doctoral granting institutions, including The University of British Columbia, consistently have higher levels of scholarly output than other types of institutions (Blackburn et al., 1978). Size (the number of full and part time faculty employed at the institution) has been found to correlate significantly with scholarly productivity (e.g., Blau, 1973). In essence, The University of British Columbia does exhibit many characteristics of other universities with high research productivity. What applies to The University of British Columbia Faculty of Education (the accessible population) is apt to apply to other universities' faculties of education (the target population) to a greater or lesser extent. This claim is not based upon normative generalization, but upon the logic of case studies generally, that what applies to one faculty is apt to apply to others.

There are 225 full-time faculty members at the assistant, associate, and full professor ranks in the Faculty of Education at The University of British Columbia. Because studies (e.g., Baldwin, 1979; Blackburn and Lindquist, 1971) indicate that professors differ (e.g., in research interests, productivity) in different ranks or career stages, the population was stratified by rank to ensure that a representative group was received from the population. Table 1 depicts the numbers in the three ranks of the accessible population.

TABLE 1: THE UNIVERSITY OF BRITISH COLUMBIA FACULTY OF EDUCATION BY RANK — 1982

Rank	n
Professor	51
Associate Professor	90
Assistant Professor	84
Total	225

Initially, a twenty percent random sample was to be drawn from each rank. However, an examination of the three ranks by two career stage indicators, tenure status and years to retirement, revealed that there were a number of faculty members of long service at the assistant professor and associate professor levels and untenured faculty members at the associate professor level (see Table 2). These age

TABLE 2: THE UNIVERSITY OF BRITISH COLUMBIA FACULTY  
OF EDUCATION BY RANK, TENURE STATUS, AND  
YEARS TO RETIREMENT — 1982

Rank	Tenure Status			Years to Retirement		
	Tenured	Not Tenured	Total	<15	>15	Total
Professor	51	0	51	41	10	51
Associate Professor	80	10	90	41	49	90
Assistant Professor	58	26	84	22	62	84
Total			225			225

and tenure status differences in the ranks suggested that the sample should be modified by career stage to ensure that a representative group would be obtained.

While there are varied conceptions of career stages, there is also considerable overlap in these conceptions. After a lengthy review of theories, Hall (1976) concluded that a single division into early, middle, and late stages is best. Moreover, at least two studies provide empirical support for this conclusion (Rush et al., 1980; Stumpf and Rabinowitz, 1981). Perhaps there are more stages, but the evidence does not appear to be strong enough at the present time to justify more than three general divisions in order to ensure a representative sample of incidents from The University of British Columbia Faculty of Education.

To take account of the age and tenure status differences of the education faculty, modifications were made to the rank-based stratification of faculty. These modifications were based on a three career stage model (Hall, 1976). The first stratum became faculty members from the assistant and associate professor ranks who were at the early stage. This stage begins upon entry into the university and ends with the granting of tenure. At UBC, tenure is awarded after the fifth year, providing that a faculty member demonstrates professional competence in teaching and scholarly activity and has made a service contribution. As depicted in Table 3, a total of thirty-six faculty members (10 associate professors and 26 assistant professors) were untenured and at this early stage.

The second stratum consisted of faculty members from all ranks who were at the middle stage. This stage begins with the awarding of tenure, with or without promotion to associate professor, and ends when the faculty member is fifteen years from retirement. Eighty-five faculty members (ten professors, thirty-nine associate professors, and thirty-six assistant professors) were at this middle stage (see Table 3).

The third stratum consisted of faculty members from all ranks who were at the late stage. This stage captures faculty members in the final stages of their careers, the last fifteen years of work, from age fifty to sixty-four.

TABLE 3: THE UNIVERSITY OF BRITISH COLUMBIA FACULTY  
OF EDUCATION BY RANK, TENURE STATUS,  
YEARS TO RETIREMENT AND CAREER STAGE — 1982

Rank	Career Stage	Years to Retirement			Total
		>15 Years	<15 Years		
		Early <sup>1</sup> Stage	Middle <sup>2</sup> Stage	Late <sup>2</sup> Stage	
Professor		0	10	41	51
Associate Professor		10	39	41	90
Assistant Professor		26	36	22	84
Total		36	85	104	225

<sup>1</sup> Untenured faculty

<sup>2</sup> Tenured faculty

One hundred and four faculty members (forty-one professors, forty-one associate professors, and twenty-two assistant professors) were at this late stage (see Table 3).

One further modification was made. Faculty members on study leave (who were not on campus), those on sick leave, and members of the researcher's dissertation committee were excluded from the representatives of each career stage prior to the selection of the sample.

### Sample

A twenty percent random sample was drawn from each career stage for a total sample of forty-one. Eight members of the early stage participated in this study. Fourteen members of the middle stage participated. Four members of

the late stage declined participation and were replaced by random draw. Nineteen members of the late stage participated.

## DATA COLLECTION

### Critical Incident Technique

The Critical Incident Technique (Flanagan, 1954) was the selected method of data collection for this study. This technique is a form of interview research designed to collect an extensive range of incidents from people who are in a position to report what facilitated or hindered the aim of an activity. These incidents are then categorized to provide an answer to the general question of what facilitates and what hinders this activity. Flanagan refers to this set of categories as a functional description of an activity.

The technique grew out of studies carried out in the Aviation Psychology Program of the Army Air Forces in World War II. The success of the method in analyzing such activities as combat leadership and disorientation in pilots resulted in its extension and further development after the war. This developmental work has been carried out primarily at the American Institute for Research and The University of Pittsburgh (Flanagan, 1954:354)

Since the initial studies, the Critical Incident Technique has had a variety of applications. For example, it has been used to improve the design of equipment, to develop proficiency measures (Flanagan, 1954), and to develop effective learning environments (Dachelet et al., 1981). The technique has been used in a variety of fields, including psychology, nursing, and commerce (e.g., Dachelet et al., 1981). Also, the technique is not unknown to the literature in administrative theory. It was used by Herzberg (1959) in the work which led to the development of his two-factor theory of worker satisfaction. The Critical Incident Technique has had a long history of use.

Evidence regarding the reliability and validity of the Critical Incident Technique has been provided by Andersson and Nilsson (1964). The authors used the technique to analyze the job of store managers in a Swedish grocery company. They reported that "the information collected by this method is both reliable and valid" (Andersson and Nilsson, 1964:402). This statement was based on an analysis of the following areas of concern:

1. Saturation and comprehensiveness

The authors reported that:

The material collected seems to represent very well the . . . units that the method may be expected to provide. After a relatively small number of incidents had been classified, very few new . . . categories needed to be added (Andersson and Nilsson, 1964:402).

## 2. Reliability of collecting procedure

The number and structure of the incidents were affected only slightly by different interviewers and methods of collecting the material (i.e., interviews and questionnaires).

## 3. Control of categorization

The stability of the category and subcategory systems was high when different groups of students tried to classify the incidents.

## 4. Importance of the categories

A content analysis of training literature used in the internal training of store managers and an analysis of questionnaire ratings indicated that the Critical Incident Technique covered the essential points in the job of a store manager.

The Critical Incident Technique also suggests the procedures for inducing categories from the basic data. Flanagan (1954:344-345) highlighted the following steps:

1. The selection of the general frame of reference for describing the incidents.
2. The selection of the levels of specificity-generality to use in reporting.

Flanagan (1954:345) made the following points concerning this step:

- a. The headings should have a logical and easily remembered structure.
  - b. The titles should convey meanings, without detailed representation.
  - c. The headings should be parallel in content and structure.
  - d. The headings should be comprehensive.
3. The submission of tentative categories to others for review.

The Critical Incident Technique has a further inherent strength. It:

. . . is essentially a procedure . . . . It should be emphasized that the Critical Incident Technique does not consist of a single rigid set of rules governing such data collection. Rather, it should be thought of as a flexible set of principles which must be modified and adapted to meet the specific situation at hand (Flanagan, 1954:335).

In conclusion, the Critical Incident Technique was selected as the best approach for the purpose of this study, because the technique has the following advantages: 1) has been shown to be a reliable and valid way to collect incidents relevant to a functional description of an activity; 2) suggests the procedures for inducing the categories; 3) consists of a flexible set of principles; and 4) has been used extensively in a variety of fields, including education.

Definition of an incident. In this study, an incident was defined as any event or happening that is sufficiently complete in itself to permit inferences and predictions to be made. An incident could occur at a point in time (e.g., received an invitation to present a paper), recurrently over time (e.g., periodically observed reading problems at a Learning Centre), or more continuously over a period of time (e.g., collaborated with a colleague on a project). In each case, what was important in this context was whether the incident was seen to affect scholarly activity in a facilitating or hindering way.

Specifications. After a brief introduction to the purpose of the study, a critical incidents interview starts with a request for events. Each incident is subjected to a criterion check which provides assurance that the incident has significant impact upon the activity. Then the interviewer elicits details of what led up to the incident, what actually happened that was helpful, and why it was so helpful. After several facilitative incidents are reported, or the faculty member runs out of incidents, the interviewer requests events that hinder the aim of the activity, following the same procedure. The result is a number of facilitating and hindering incidents from each faculty member.

From this brief description, it can be seen that three specifications must be detailed for a successful critical incident study. First, the general aim of the activity must be specified. Second, the criterion for accepting an incident or allowing the subject to elaborate must be stated. Third, the interview questions must be established.

The specification of a general aim is essential for communicating the types of incidents required. In some studies, a pilot study is undertaken simply to obtain the aim, framed in the idiom of the workers seeking to fulfill it. A pilot study to establish the aim was unnecessary in this case. The term scholarly activity was immediately recognizable to faculty members and communicated quite clearly what the interview was about, as the term has an official definition in The University of British Columbia Faculty Handbook (1979: Section 1.01). In this study, then, the aim of scholarly activity is doing and disseminating research of an original character, or in appropriate disciplines, creative or professional work of distinction.

According to Flanagan (1954:338), an incident is critical "if it makes a 'significant' contribution, either positively or negatively to the general aim of the activity." In this study, the criterion for significance was whether or not an event led to, delayed, or impeded action.

The actual questions used to elicit details of the facilitating event were as follows:

1. "Think back to a time, since coming to The University of British Columbia, when something happened that significantly helped facilitate your scholarly activity."
2. "Did this event lead you to take definite steps such as write a grant proposal, complete a literature review?" If the answer was no, the interviewer said, "I wonder if you can think of something that helped facilitate your scholarly activity that led you to take definite action."
3. When the faculty member indicated that he had such an event in mind, the interviewer said, "What was the event?"
4. "What were the general circumstances around this event?"
5. "What exactly facilitated your scholarly activity?"
6. "Why was this event so helpful in facilitating your scholarly activity?"
7. "Can you think of another event that helped facilitate your scholarly activity?"

Once the subject indicated he or she recalled another event, questions two through seven were repeated.

The questions used to elicit details of the hindering event were as follows:

1. "Now, think back to a time when something happened that hindered your scholarly activity."
2. "Did this event impede action, such as cause you not to complete a grant application?" If the answer was no, the interviewer said, "I wonder if you can think of something that did impede action."
3. When the faculty member indicated that he had such an event in mind, the interviewer said, "What was the event?"

4. "What were the general circumstances around this event?"
5. "What exactly hindered your scholarly activity?"
6. "Why was this event so hindering to your scholarly activity?"
7. "Can you think of another event that hindered your scholarly activity?"

Once the subject indicated he or she recalled another event, questions two through seven were repeated.

In this way, the interview was directed toward actual, concrete events rather than opinions and speculations.

#### Pilot Study

In the summer of 1982, a pilot study was conducted to evaluate the interview format and methods of recording these incidents. Three faculty members from each career stage participated. After each interview, an informal discussion was held to obtain feedback on the clarity, format, and style of the interview. As a result of the feedback, it was decided to tape all interviews, as recording the incidents took time and distracted the attention of both the researcher and the subject.

#### Interview Procedures

In the fall of 1982, the selected faculty members were interviewed over a three month period. After receipt

of the recruitment letter (see Appendix A), subjects were phoned to set a time. Two faculty members were interviewed at home and the rest were interviewed in their offices. The interviews took approximately one hour to complete. Faculty members were informed of the purpose of the study, of selection criteria, and of how confidentiality and anonymity would be maintained (see recruitment letter, Appendix A). Then the main part of the interview was introduced with the following remarks:

The purpose of this interview is to elicit from you incidents in which your scholarly activities were significantly facilitated or hindered while you have been at The University of British Columbia. An incident is defined as any event or happening that is sufficiently complete in itself to permit inferences and predictions to be made. By scholarly activity, I mean the doing and disseminating of research of an original character or, in appropriate disciplines, creative or professional work of distinction. Specifically, I am referring to an activity that led to published work (e.g., articles in refereed journals, chapters, books, monographs) or professional or creative contributions that were not of a routine or repetitive character; were available for peer assessment; and contributed to the achievement of a regional or national reputation. To be significant, an incident must have either led to or impeded an action relevant to scholarly activity. Note, I am not asking for well formed opinions but for specific events that happened to you. Do you have any questions?

Care was taken to avoid asking any leading questions after the main questions had been stated. However, if a subject had trouble initially identifying an incident, the following prompting statement was used to elicit a facilitating incident: "Think back to when you were engaged in a scholarly activity. Trace back to anything that got the scholarly activity going or if it stalled got it

moving." For a hindering incident, the following statement was made: "Think back to when you were engaged in scholarly activity. Trace back to anything that impeded progress." Once the subject indicated that he or she had an event in mind, the interview was continued with questions two through seven, as previously outlined.

#### Method of Recording and Extracting Incidents

Thirty-eight of the interviews were tape recorded. Two were not recorded at the faculty member's request. One interview was also not recorded due to mechanical failure of the recording machine; instead, extensive notes were taken. From these tapes and notes, incidents were identified, assigned the faculty member's identification number, and transcribed onto index cards, one incident per card. Typically, the incidents were recorded in the faculty members' own words. Occasionally, their responses were paraphrased.

During the interview or the transcription of the incidents, two questions and criteria were applied. These questions and criteria are presented and discussed in the following paragraphs.

Question 1. Does the reporting of the incident seem complete? As Flanagan (1954:340) noted, "vague reports suggest that the incident is not well remembered." In a few

instances, where the faculty member seemed to present only part of the story or talked in abstract generalities, the faculty member was asked in the interview to "[restate] the essence of the remarks" (Flanagan, 1954:342). In most cases, this resulted in the faculty member bringing out details that completed the picture.

Question 2. Has the faculty member made it clear why the incident was critical? Interview question six (Why was the event so hindering [facilitating] to your scholarly activity?) provided the information. Incidents were included (transcribed) only if they fulfilled the criterion, either leading to or impeding a definite action relevant to scholarly activity. Incidents were excluded if they were not related to a definite action. All statements of opinion and speculation were also excluded.

#### ANALYTICAL PROCEDURES

As described in the previous sections, incidents were collected from UBC education faculty members that facilitated or hindered the aim of scholarly activity. "The purpose of the data analysis stage is to summarize and describe the data in an efficient manner so that it can be effectively used" (Flanagan, 1954:343-344). In this study two analyses were carried out. The first consisted of the

classification of incidents. The second was a preliminary exploration of relationships among the categories developed in the first analysis.

### First Analysis

Two frames of reference were adopted in the classification analysis. The first frame of reference concerned the intended use of the category scheme. As the scheme of categories is to be used by administrators to develop a climate within which scholarly activity is facilitated, what was sought were categories that would be informative for effective administration, similar to a checklist of things to do to facilitate scholarly activity.

The second frame of reference concerned the nature of a category scheme. Following the work of Rosch (1977) and others (e.g., McCloskey and Glucksberg, 1978) on "natural" categories, it was assumed that categories are not clearly and rigidly bounded logical containers such as a set of red, round objects. In a rigorously logical category, objects either are or are not included. Once included, all members of a category have equal membership. The judgment is all or nothing, with no shading. In contrast, Rosch (1977) has shown that natural categories are much looser entities whose members are held together by family resemblance. That is, members of a category share features. Some members share more features than others. From this

perspective, a category has no well-defined border. A member might share many features with members of a category and also share some features with members of other categories. Also, membership in a category is not all or nothing, but more or less. According to Rosch, categories gain unity by a prototype or clear example. A prototype has the greatest similarity in features to members of one group and the least similarity to members of other groups. Other members fit within a category to the extent that they share features with prototypical members. Accordingly, a prominent aspect of categorization was the search for prototypes.

The first step in the procedure was immersion. All incidents were examined, noting grounds for integration and differentiation. Ambiguities and questions were noted and considered. This step was general, an attempt to get an intuitive sense of the data and their complexities.

The second step was to undertake a trial classification. Incidents that seemed similar were placed in groups, and prototypes were identified which seemed to group incidents. Provisional categories were used to order the prototypes. Difficulties were exposed through examination and consultation with other people in a doctoral seminar. A revision to manage difficulties was attempted and then checked (see section on reliability in Chapter 6). Several cycles were required to develop satisfactory categories for the incidents.

## Second Analysis

Once the categories had been established in the first analysis, two kinds of exploratory analyses were carried out. The first consisted of examining the categories themselves to see whether they could be grouped to yield a higher order classification. The second consisted of examining the frequency of reported incidents in categories.

## Reliability and Validity

Because questions of reliability and validity are best discussed in the light of the results of the analyses, the questions, the details on how they were examined, and the outcomes of the examination are presented in Chapter 6.

## SUMMARY

The research design was presented for this study, whose purpose was to develop and explore a reasonably comprehensive scheme of categories which describes, from the perspective of faculty members, what facilitates and hinders their scholarly activity. The study used the Faculty of Education at The University of British Columbia for the

investigation. Because studies indicate that differences exist among professors in different ranks or career stages, the 225 full-time faculty members at the assistant, associate, and full professor ranks were stratified by rank and career stage to ensure a representative group from the accessible population. A twenty percent random sample was drawn from each stage for a sample of forty-one. Eight members from the early stage, fourteen from the middle stage, and nineteen from the late stage participated.

The Critical Incident Technique was the selected method of data collection for this study. Three essential specifications for a successful critical incident study were detailed. First, the general aim of the activity was specified as doing and disseminating research of an original character, or in appropriate disciplines, creative or professional work of distinction. Second, the criterion for accepting an incident was stated as whether or not an event led to, delayed, or impeded action. Third, the actual questions used to elicit details of the events were presented.

A pilot study was conducted in the summer of 1982 to evaluate the interview format and method of recording the incidents.

In the fall of 1982, faculty members were interviewed for approximately one hour in their homes or offices. From the tape recorded interviews and notes,

incidents were identified and transcribed on to index cards. During the interview or the transcription of the incidents, two questions and criteria were applied. First, "Does the reporting of the incident seem complete?" Where faculty members seemed to present only part of the story or talked in abstract generalities, the faculty member was asked in the interview to restate the essence of the remarks, which usually brought out more details to complete the picture. Second, "Has the faculty member made it clear why the incident was critical?" This information was provided by the interview question "Why was the event so hindering (facilitating) to your scholarly activity?" Incidents had either to lead to or impede an action relevant to scholarly activity. Incidents were transcribed only if they fulfilled the above criteria.

Two analyses were carried out. The first consisted of the classification of incidents. The second was a preliminary exploration of relationships among the categories developed in the first analysis.

## CHAPTER 4

## RESULTS I: THE CATEGORY SCHEMES

This chapter is organized into three major sections. First, a general description of incident frequency is presented. Second, categorization is discussed. The reported incidents were categorized in three different ways, according to who facilitated or hindered scholarly activity, to what facilitated or hindered scholarly activity, and to the phase of scholarly activity that was facilitated or hindered. Third, the three category schemes are described.

## INCIDENT FREQUENCY

In response to the research question, what do The University of British Columbia education faculty members report as facilitating and hindering their scholarly activity, faculty members produced a total of 547 usable incidents. An incident was usable if it was a factual report of an occurrence that led to or delayed or impeded an action concerned with scholarly activity. Events were excluded which did not lead to or impede an action relevant to scholarly activity.

Of the total number of incidents, 400 were facilitating and 147 were hindering. One reason for the difference in the number of facilitating and hindering incidents is perhaps a general tendency of faculty to count delays and obstructions as irritants rather than as hindrances. Another more important reason is that the way the interview questions were framed required that the respondent think of on-going scholarly activity. That is, facilitating incidents could be reported that led to the start of a project. However, hindering incidents could be reported only if a project was under way. For this research, it was assumed that unless a project was in progress, it could not be hindered. This is perhaps too stringent a requirement for it disallows a whole area of hindrances. However, since this area would involve an opinion that one would have done something rather than an actual report of what one did or was prevented from doing, it seemed more prudent to use the more stringent requirement.

The average and the range of the number of incidents reported by faculty members are displayed in Table 4. On the average, each of the forty-one faculty members interviewed produced 9.8 facilitating incidents and 3.6 hindering incidents. As can be seen in the range, faculty members varied considerably in the number of incidents reported. Generally, as will be discussed later, those who

TABLE 4: AVERAGE AND RANGE OF THE NUMBER OF INCIDENTS  
REPORTED BY FACULTY MEMBERS

	Type of Incident		
	Facilitating	Hindering	Total
Average	9.76	3.59	13.35
Range	1-21	0-10	1-24

were not actively involved in scholarly activity reported few incidents.

#### CATEGORIZATION

During categorization, it became apparent that what facilitates or hinders could be a source, an agent, or the action of an agent. Clarity was achieved in categorization when these three reported facets (source, agent, and action of agent) were recognized and separated.

There was considerable overlap in two of the facets, sources and agents. That is, typically the source was an agent or agency. For example, if a colleague provides a critical evaluation of a rough draft of a paper, the colleague is both a source and an agent. However, some incidents required a distinction as in the following example. "Faculty member limited the time available for scholarly activity by altering his research schedule to

accommodate his elderly parents." In this example, parents were a source of difficulty, but the faculty member was the agent, for it was the faculty member, not the parents, who altered the research schedule. Sources of facilitation and hindrance were eliminated from further consideration. The general notion of an agent or agency was retained as a means of categorization.

The third facet, the actions of the agent or agency, can be clearly distinguished from the agent or agency. These actions became the major focus of categorization because they are the bases for answering the research question, "What do UBC education faculty members report as facilitating and hindering their scholarly activity?". It also became apparent that each action resulted in or led to a facilitation or hindrance of some phase of scholarly activity. As with the first category scheme of agents and agencies, these phases of scholarly activity were also categorized to yield a more complete description.

In summary, the incidents were categorized in three separate ways, resulting in three different category schemes (Table 5). The incidents were categorized according to the reported responsible agent or agency. The incidents were categorized according to what the agent or agency did (the reported action) that was facilitating or hindering. The incidents were categorized according to the phase of scholarly activity that was reported facilitated or

TABLE 5: CATEGORY SCHEMES

Agent or Agency Category Scheme	Action Category Scheme	Phase Category Scheme
Who facilitates or hinders scholarly activity	What facilitates or hinders scholarly activity	The outcome of scholarly activity that was facilitated or hindered

hindered. Of the three category schemes, the action category scheme is the most important, as it constitutes the answer to the research question. That is, the action categories answer what faculty members reported as facilitating and hindering their scholarly activity. The agent or agency categories indicate who was reported to facilitate and hinder and the phase categories indicate the outcome that was reported facilitated or hindered. The latter two category schemes are primarily presented to gain a more complete description of the major product of this dissertation, the action category scheme.

#### CATEGORY SCHEMES

A majority of the categories in the three category schemes contain both facilitating and hindering incidents. The categories in each scheme are shown for convenience in Table 6. The following pages describe the contents of that

TABLE 6: CATEGORIES IN THE CATEGORY SCHEMES

Agent or Agency <sup>1</sup> Categories	Action Categories <sup>2</sup>	Phase Categories <sup>3</sup>
Self	Reading or Studying Scholarly Activities	Scholarly idea
Spouse	Practical Activities Discussion	Scholarly design and research proposal
Colleague	Advice Funds	Scholarly research and data collection
Student	Time Access to data Information	Scholarly analysis
Administrative person, committee, or agency of UBC	Reference materials Space and non-computer equipment	Scholarly product and dissemination
Other outside agents and agencies	Computer services Typing, xeroxing, and mailing services Research assistance Critical evaluation and commentary Other forms of practical assistance Skills Bureaucratic procedures Opportunities Approval: recognition and appreciation Expectations Tangible benefits Collaboration	Scholarly project

<sup>1</sup> Who facilitates or hinders scholarly activity

<sup>2</sup> What facilitates or hinders scholarly activity

<sup>3</sup> Outcome of facilitation and hindrance of scholarly activity

table. Most of the categories are clear as stated and not in need of further explication. For example, the "time" category in the action category scheme means exactly what it says. A faculty member is provided time to do scholarly activity.

Accordingly, each category in the three category schemes will be clarified, not so much by explication but by providing examples and by portraying the range of reported incidents, where applicable, and by reporting the frequency of facilitating and hindering incidents. The categories will be presented in the following order: agent or agency categories, phase categories, and action categories.

#### Agent or Agency Categories

The agent or agency is the person, office, centre, or institution reported as responsible for facilitating or hindering scholarly activity. It is an answer to the question of who did something that facilitated or hindered. Six agent or agency categories were identified.

##### 1. Self. (64 facilitating, 35 hindering)

The individual faculty member, himself or herself, was reported as a major agent in facilitating or hindering scholarly activity. This category refers to individuals, when they are acting out their own self-inclinations but not as an official (e.g., department head).

2. Spouse. (6 facilitating, 0 hindering)

This category refers to a faculty member's husband or wife.

3. Colleague. (104 facilitating, 4 hindering)

This category encompasses associates not only in one's department, but in other departments and other universities. It also includes associates from professional organizations, networks, and alma maters.

4. Student. (35 facilitating, 7 hindering)

This category includes former and current graduate and undergraduate students, as well as workshop participants, practicum teachers, and research assistants.

5. Administrative person, committee, or agency of The University of British Columbia. (105 facilitating, 88 hindering)

This category has extensive range. It includes the president, the dean of education, the associate dean of education, department heads, secretaries, librarians, and such agencies as the Office of Field Development, Office of Education Graduate Programs and Research, Office of Research

Services, Computing Centre, Educational Resource Service Centre, Library, and various committees (e.g., tenure and promotion committees).

6. Other outside agents and agencies.

(86 facilitating, 13 hindering)

This category includes federal and provincial governments, professional organizations, volunteer organizations, school district personnel and boards, publishers and editors, and various granting organizations.

Phase Categories

The phases of scholarly activity are the outcomes of facilitations and hindrances reported by faculty members. The phases form an orderly sequence, beginning with an idea and ending with the dissemination of a product. Six categories were identified.

1. Scholarly idea. (86 facilitating, 2 hindering)

This category refers generally to the recognition of a problem, the first step in the scientific process. It was commonly termed a conception, notion, or just a thought. In each case, an idea was either encountered or developed.

2. Scholarly design and research proposal.

(37 facilitating, 19 hindering)

Once a professor has an idea, he or she develops a systematic plan of action for exploring and testing the idea. While a proposal for a granting agency is different from a plan, the two are difficult to separate in practice. For example, having to complete a plan is necessary for making a proposal.

3. Scholarly research and data collection.

(32 facilitating, 13 hindering)

This category encompasses data collection in its many forms, ranging from field testing in classrooms to extensive travel in foreign countries. Both this and the preceding category show strikingly the quite diverse needs of people engaging in scholarly activity.

4. Scholarly analysis. (18 facilitating,

6 hindering)

This category includes any form of data analysis and examination.

5. Scholarly product and dissemination.

(84 facilitating, 20 hindering)

The product can be a paper, article, book, monograph, curriculum guide, or artistic production, among other things. The distribution of products ranged from journals and books to talks and exhibitions. These two, product and dissemination, were combined, in as much as they tended to occur together and be seen as parts of the same phase.

6. Scholarly project. (143 facilitating,

87 hindering)

This is a general category which includes the categories above. Since certain actions were reported as facilitating or hindering some or most phases of scholarly activity, a more encompassing category was required. In some respect, therefore, this category is different from others in this scheme. This issue is discussed in Chapter 6.

Action Categories

As reported by faculty members, the actions are what an agent or agency did that was so facilitating or hindering. The categories described here as "action"

categories, however, are not necessarily expressed in the form of actions. Rather, each one is a category in relation to which action is taken. Thus, one of the categories is "time," which is to say that the incidents so classified all referred to some action by an agent or agency having to do with the providing of time or the denying of time or some other action concerning "time."

Twenty-three action categories were identified. These categories will be described by providing examples that are judged as prototypical, by portraying the range of reported incidents, and by reporting the frequency of facilitating and hindering incidents. Most categories contain both facilitating and hindering incidents. In many cases, the presence of the action is the facilitation and its absence is the hindrance. In some cases, however, the relationship of facilitating to hindering action is not so straightforward. In the case of "recognition and appreciation," for example, it may well be that the absence is identified as a hindrance, but it may also be that the hindrance consists not in the absence of appreciation but in the presence of depreciation. Accordingly, the nature of both facilitating and hindering incidents will be clarified for each category.

Following are the twenty-three action categories that were identified.

1. Reading or studying. (14 facilitating,  
0 hindering)

Ideas arising out of a review of new literature in my area of research led to a scholarly project.

This year, I taught a new graduate course in my area of research. While reading for the class, I became aware of a research problem.

Reading or studying, whether for courses or personal interest, are encompassed by this category. No hindering incidents were reported in this category and the next three categories - scholarly activities, practical activities, and discussion. These categories are a special case, which will be discussed in Chapter 6.

2. Scholarly activities. (8 facilitating,  
0 hindering)

An idea arising from the results of a prior scholarly project led to a new scholarly project.

Results of one project led to another research question, which became a large funded project involving a number of people.

Prior scholarly activity included dissertations and theses.

3. Practical activities. (13 facilitating, 0 hindering)

A question arising from a series of observations made while teaching in the public school system, triggered a research idea.

Involvement in clinical work made me aware of some research problems, which were developed into research projects.

The diversity of practical activities was considerable, ranging from volunteer organizations to travel with a national team.

4. Discussion. (37 facilitating, 0 hindering)

Discussions with graduate students generated a research idea.

Interesting discussions with colleagues led to several papers. Specifically, I was exposed to different outlooks and types of research that stimulated and refined ideas.

Discussions were mentioned as taking place in classes, workshops, dissertation and thesis committee meetings, and at conferences.

5. Advice. (19 facilitating, 3 hindering)

I was guest lecturing in another department for a number of years. A colleague suggested that I organize some of the things I had been saying to these classes. As a result, a paper was written.

Several colleagues suggested that Canadian data be collected on a test and compared to American data.

I was advised by SSHRCC and Graduate Division to broaden the focus of my proposal, because there would be a negative reaction by SSHRCC adjudicators to the present focus. I made the changes, but felt prejudiced because I was not able to pursue the topic of interest.

Faculty members reported being advised to apply for a grant, to use time from classes to write a research proposal, to do scholarly activity, to stay home and write a monograph, to do a parallel study, to focus on one line of research and ignore conflicting advice, and so on. The three hindering incidents did not emphasize lack of advice, but bad advice. There were few hindering incidents, possibly because a faculty member might not be aware he or she is not getting advice that could help.

#### 6. Funds. (53 facilitating, 12 hindering)

A small grant was received from the university, enabling me to hire a research assistant to collect data.

Due to the recession, the Ministry of Education has no funds to support research projects. This has prevented me from completing the data analysis section of a project.

Funds were cited as enabling faculty members to hire research assistants, pay for computer time, pay for mailing services, and a host of other requirements for scholarly activity, while an absence of funds disenabled. Funds is a special category, in one sense, as funds allow one to fulfill many of the other categories.

7. Time. (41 facilitating, 60 hindering)

I was granted a four month special leave, allowing me to work full time on a manuscript.

In previous years, departmental meetings have been scheduled on Tuesdays. However, this year the meetings have been interspersed throughout the week. These meetings and teaching responsibilities have prevented me from completing a project, which requires two free days a week for six weeks.

The May practicum was so time consuming that I set aside several papers requiring revision.

A deadline was not met because the Human Subjects Committee took six weeks to make a decision on the project.

Most of the facilitating incidents were like the first example above. Study leaves in particular were frequently reported as an important facilitator of scholarly activity. Other ways to provide time included readjustments in teaching schedules, reduced teaching load, reduced committee obligations, and non-teaching blocks of time in summer.

In contrast, the hindering incidents were more diverse, as suggested by the three hindering incidents above. Scholarly activity was reported to be hindered by shortened study leave, a five-day teaching schedule, new course preparation, ad hoc requests (e.g., preparation of a brief), administrative tasks, and committee responsibilities. Also, hindering incidents stressed the

time taken in delays. For example, to receive approval on a grant proposal might take a year. If the faculty member does not have other projects, this constitutes quite a lengthy time of inactivity. At least one faculty member mentioned shifting his scholarly activity focus during the wait for approval of a grant proposal. Delays by the Human Subjects Committee reportedly ranged from weeks to several months, resulting in missed opportunities, failures to fulfill contract obligations, and missed deadlines.

8. Access to data. (18 facilitating, 4 hindering)

Former students helped identify schools that were willing to field test a product.

I established contacts in foreign countries who assisted in gaining access to data.

I did not have easy access to necessary government records for a monograph. As a result, I was forced to scale down a project.

To conduct scholarly activity, faculty members require access to many different types or sources of data, from government records to classrooms. To gain access, faculty members require various types of approval or just cooperation, neither of which can be taken for granted. Faculty members described being unable to gain access to data due to lack of cooperation or approval.

9. Information. (6 facilitating, 5 hindering)

Research Administration Office provided information on sources of grants and when to apply.

Two weeks were spent completing the Human Subjects form. However, I did not know that I needed to include the phrase 'and your treatment will not be jeopardized' on the consent form. As a result, my proposal was rejected and I had to re-submit the form.

In making proposals to the Human Subjects Committee and to granting agencies, faculty members reported receiving information that facilitated the process, or they lacked information as well as received misinformation. For example, one faculty member recounted receiving incorrect information on the cost of buying out teaching responsibilities. This category could be hypothetically expanded since faculty members require a great variety of information.

10. Reference materials. (14 facilitating, 4 hindering)

A colleague gave me articles and a prototype for a proposal.

I was looking for a specific book. I went to the main library only to find that the book was located in another building. When I went to the second building, I found that the book was not in the stacks and not checked out. A trace was put on the book and I am still waiting four weeks later for this vital reference.

To do scholarly activity, faculty members require books and journals, among other things. Hindering incidents highlighted the difficulty of finding reference material in the library.

11. Space and non-computer equipment.

(5 facilitating, 1 hindering)

Office of Field Development provided space for a funded research project.

For scholarly activity projects, faculty members mentioned being provided with space. While there were few incidents in this category, it seems clear that a number of items are provided, the lack of which might hinder the scholarly project. Deficiencies in this area would probably have generated many more incidents, while effective provisioning would be easy to overlook.

12. Computer services. (9 facilitating,

3 hindering)

I used a statistical package available at the Computing Centre to help analyze my data.

Computer programmes [sic] have assisted my scholarly activity because they provide data without supplying names, which avoids the issue of confidentiality.

I had a large collection of data tapes which were not compatible with UBC machines. As a result, a project was delayed for a year while the tapes were sent to another university for analysis.

The use of computer equipment, including word processors, facilitates, while its inaccessibility hampers.

13. Typing, xeroxing, and mailing services.

(4 facilitating, 13 hindering)

Department secretaries have typed all of my manuscripts.

Lack of secretarial assistance has delayed my submissions to journal editors.

A typed paper from the secretary was so riddled with errors of omission, commission, repetition, and punctuation that it required considerable effort to try to correct them all. Even now, after the paper has been submitted, I still find occasional errors, some involving subtle substitutions which shifted the meaning and some involving the deletion of a 'not' that radically altered the meaning.

The majority of incidents in this category were hindering ones in which typing, xeroxing, and mailing services were described as lacking or typing was done poorly. In contrast, positive incidents primarily cited typing done with reasonable speed and skill.

14. Research assistance. (2 facilitating,

4 hindering)

A graduate student was assigned, as part of a tutorial, to help with interviews.

During a study leave, a list of things was identified that require researching. However, I did not have an assistant who could undertake a series of small projects.

Research assistance is provided directly by research assistants and indirectly by agents who provide a way to hire or give scholastic credit to research assistants. The task of the research assistant is to help with the diverse practical phases of collecting and analyzing data. The presence of such assistance facilitates while its absence can hinder. Also, since research assistants may be unmotivated or incompetent, hindrance was reported to take place through poor assistance.

15. Critical evaluation and commentary.

(17 facilitating, 2 hindering)

A colleague critiqued my SSHRCC proposal, leading to several changes prior to submission of a final proposal.

Because a colleague was unfamiliar with the instrument employed in my project, he provided misleading feedback on a draft paper.

The difference between this category and the category of discussion is that critical feedback occurs after one has an idea, typically when one is making a proposal or writing a paper. Discussion occurs before one has an idea. The two hindering incidents cited poor or misleading feedback.

16. Other forms of practical assistance.

(24 facilitating, 2 hindering)

I found several professional colleagues outside UBC to be extremely helpful. These colleagues have helped me resolve several methodological problems.

Department chairman supported my SSHRCC proposal by making sure that secretaries completed the necessary typing on time.

This category includes a wide range of incidents, which could conceivably be divided into several categories, had the frequency of incidents been higher. For example, typing is a form of practical assistance. Were the incidents involving typing fewer, it would have been included in this category. Faculty members recounted receiving support in a variety of ways. Several incidents concerned help in research design and methodology and in preparing a proposal. Letters were written to funding agencies. A senior administrator spoke up for a faculty member's research proposal to a granting agency, while a colleague presented a faculty member's proposal to a school board and urged endorsement. Faculty members also reported receiving support for personal decisions, help in preparing budgets for proposals, and support for applications for study leave. Sometimes practical assistance involved introductions to the right people. At other times, it even involved writing parts of a paper. And one colleague

provided an umbrella organization so that a faculty member could apply to a number of agencies for funding. The few hindering incidents cited lack of practical support.

17. Skills. (7 facilitating, 1 hindering)

I learned to use the word processor so that I could get scholarly reports done on time.

There are quite a variety of skills that facilitate scholarly activity. The incidents within this category note skill in evaluating papers, writing skill, skill in computer technology and use, public relations ability, as well as word processing skill noted in the above example. The single hindering incident mentioned a lack of skill in typing. This, once again, is the type of category that would be easy to overlook, since skills might be expected or taken for granted.

18. Bureaucratic procedures. (1 facilitating, 8 hindering)

An administrator signed an incomplete proposal so that a deadline could be met.

Because the Human Subjects Committee's procedures and forms were too time-consuming, I deliberately stopped doing research involving people and now engage in desk studies. Previously I did several research projects in schools.

Most of these incidents cited the Human Subjects Committee and the majority of the incidents were hindering ones, perhaps because efficient administration is taken for granted while impediments are not. Faculty members mentioned the complexity of proposals and grant regulations as hindrances. The general tenor of these incidents seems to be that the bureaucratic procedures involved can be more time-consuming than actually engaging in scholarly activity itself. This becomes particularly striking given the uncertainty of getting a grant when one has worked hard just to make the proposal. As one example, a faculty member stated that there is no approval in principle. One must have written approval from specific agencies or institutions, which can require a considerable consumption of time. Sometimes, there are lengthy delays regarding, for instance, the requisite order of signatures. An agency will not approve a project until it is approved by the university, but the university will not approve until it is approved by an agency.

19. Opportunities. (47 facilitating, 2 hindering)

I was invited by a national organization to present a paper at a research conference.

A letter was received from an editor of a journal asking me to submit an article, which I did.

I was unable to accept an invitation to speak at an international conference because the department chairman would not sanction the conference.

Within this category, faculty members mentioned receiving invitations and requests to participate in research and task forces, to present papers at conferences, to write articles for journals, to edit and write books or chapters in books, and to participate in research consortia. Less directly and less frequently, opportunities became available as a result of a change in government policy and in publication outlets, for instance. One faculty member reported receiving assurance that a book he is writing would be published. The few hindering incidents described a missed opportunity and lack of opportunity.

20. Approval: recognition and appreciation.

(10 facilitating, 8 hindering)

I won an award, which encouraged me to publish the paper.

I have defended the legitimacy of my research area on numerous occasions. To counter this negativism, I refocused my scholarly effort outside my subject area.

Largely through some form of recognition or appreciation, a faculty member's work is approved as a valuable endeavor. Approval was shown in personal contacts, general attitude of colleagues, citations and discussion in the literature of a field, formal discussions at conferences, personal notes of congratulations, and positive journal reviews. Faculty members reported that people showed interest, respect, and appreciation, among other

forms of approval. In each case, the faculty member felt encouraged to do more.

In contrast, hindering incidents indicated both lack of approval and disapproval. Sometimes, lack of recognition was formal as when one does not receive scholarly credit for a book. Other times, a faculty member learned informally that his field or area lacked respect or that the research itself was not important. More actively, a faculty member described being subject to negative comment more than indifference. Negative comments tended not to concern the work itself but rather concerned, for instance, a use of qualitative rather than quantitative design, a focus on developmental rather than "hard" research (or vice versa), or a focus on one area rather than another. In one case, the faculty member mentioned that his scholarly efforts were re-labelled as a political activity of a selfish nature, negating his work by the attribution of a dubious ulterior motive.

21. Expectations. (15 facilitating, 1 hindering)

A set of expectations arise from colleagues. The expectations have provided an impetus for research. That is several papers have been written because I was expected to produce.

There was an expectation, when I first came to UBC, that teaching and professional activities were important. As a result, I focused my energies on professional development workshops, rather than on research.

Owing to positions held and the groups or organizations to which one belongs, expectations arise which influence a faculty member to do scholarly activity. Expectations also arise from engaging in scholarly activity which supply an impetus. For example, faculty members reported that research assistants expected to have something to do. Granting agencies expected deadlines to be met. Faculty members also established their own expectations. Desire was translated through decision into a definite self-expectation or commitment. Faculty members reported resolving to enter debates, deciding to present or write papers, and setting deadlines for themselves.

The only hindering incident is quoted above. It reflects a contrary expectation that minimizes scholarly involvement. However, it could be reasonably anticipated that lack of expectation would also be a hindrance. That is, if expectations were not firmly established, one could anticipate a lower rate and degree of scholarly activity.

22. Tangible benefits. (10 facilitating,  
7 hindering)

I was told that I was not promoted because I had not met the scholarly criteria. As a result, all my efforts were focused on scholarly endeavors.

Due to personal financial circumstances, I spent a lot of time doing service activities for which I received honoraria. As a result, I set aside my own scholarly projects.

This category is similar to the category of expectations, but with the difference that tangible benefits such as tenure, promotion, and money are offered as the rewards for fulfilling institutional expectations. Nearly all facilitative incidents concern the gaining of promotion or tenure, with one incident concerned with gaining an honorarium. Usually requirements for tenure and promotion were stated definitely and dispassionately (if you want it, do this), but in a few incidents communication was quite forceful, as in "your job is on the line."

Most frequently, in hindering incidents, scholarly activity did not lead to tangible benefits. Instead, merit pay, tenure or promotion went to those who were doing other things. As a result, a faculty member was not likely to see just that there was little benefit from scholarly activity, but that there was real benefit from other activities. One untenured faculty member mentioned setting aside more long-range theoretical efforts in order to do short-term work that was immediately publishable. In these incidents, it is more difficult to separate lack of tangible benefits for scholarly effort from contrary requirements for these benefits. Faculty members tended to see both aspects in each incident. Throughout, what is at stake is a tangible benefit rather than intangibles, such as recognition.

23. Collaboration. (26 facilitating, 7 hindering)

Collaboration with a colleague has led to three projects that are directly linked to one line of research.

Department colleagues were not interested in collaborative research. As a result, I engaged in several short-term projects rather than the major project I preferred.

Collaboration refers to faculty members working together. Scholarly work was reported to be hindered by the lack of collaboration, due to death of a partner, department politics, and general difficulty finding a collaborator, among other things.

#### SUMMARY

In response to the research question, what do The University of British Columbia education faculty members report as facilitating and hindering their scholarly activity, faculty members produced a total of 547 incidents. These reported incidents were categorized in three separate ways: by the reported responsible agent or agency, by the reported action of the agent or agency, and by the phase of scholarly activity reported facilitated or hindered. Six agent or agency categories, twenty-three action categories, and six phase categories were identified. A preliminary exploration of relationships among the categories is undertaken in the next chapter.

## CHAPTER 5

## RESULTS II: A PRELIMINARY EXPLORATION OF RELATIONSHIPS AMONG CATEGORIES

In this chapter, a preliminary exploration of relationships among categories is undertaken in order to gain a more complete picture of the action category scheme. First, there is an examination of the action categories themselves to see whether they can be grouped to yield a higher order classification. Second, frequencies of reported incidents are examined for action and phase categories, and for action and agent or agency categories.

## EXAMINATION OF THE ACTION CATEGORIES

As can be seen in Table 7, the action categories are grouped under one of three superordinate categories: direct, enable, and motivate. The categories of reading or studying, scholarly activities, practical activities, discussion, and advice are grouped under "direct." The categories of funds, time, access to data, information, reference materials, space and non-computer equipment, computer services, typing, xeroxing and mailing services, research assistance, critical evaluation and commentary, other forms of practical assistance, skills, and bureaucratic procedures are grouped under "enable." The

TABLE 7: GROUPINGS OF ACTION CATEGORIES

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Superordinate Categories	Action Categories
<hr/>	
Direct:	Reading or studying Scholarly activities Practical activities Discussion Advice
Enable:	Funds Time Access to data Information Reference materials Space and non-computer equipment Computer services Typing, xeroxing, and mailing services Research assistance Critical evaluation and commentary Other forms of practical assistance Skills Bureaucratic procedures
Motivate:	Opportunities Approval: recognition and appreciation Expectations Tangible benefits Collaboration

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categories of opportunities, approval, expectations, tangible benefits, and collaboration are grouped under "motivate."

These groupings were formed by asking: What do these action categories have in common when facilitating and hindering scholarly activity? For example, how does time facilitate? Time seems to enable the researcher to do scholarly activity. Likewise, funds seem to enable. However, incentives do not seem to enable but rather to motivate. The category of reading and studying may conceivably motivate, but what it really seems to do and the way it was used by the faculty members, was to provide direction.

Thus, there are three groupings which become apparent in asking the question posed above. Action categories either provide direction, enable a faculty member to do scholarly activity, or provide incentive or motivation. These groups are consistent with Heider's (1958) analysis of the requirements for accomplishing any goal. That is, is the person directed toward a goal? Is the person able to accomplish it? Is the person motivated to try hard enough to reach it?

These three questions seem particularly appropriate for administrators who are attempting to facilitate scholarly activity, for they pose three different bases for assessment and administrative action. For example,

providing incentives would be a mistaken and frustrating administrative action if faculty members lacked basic enablers. Enablers are irrelevant to those who lack a scholarly direction and direction is irrelevant to those who lack incentive. However, it would be misleading to distinguish between the categories too rigidly, for they also share features. Under the category of advice, for example, faculty members reported being encouraged. In fact, the subjects often seem to use the two terms interchangeably as in: "I was advised/encouraged to apply for a research grant."

However, this category is still properly viewed as one of direction, for what stands out is that one is not encouraged or advised in general, but in a specific direction. Typically, faculty members highlighted in their incidents whether direction or motivation was dominant. However, if advice is somewhat ambiguous, other categories are more clearly separate. For example, when a faculty member's work is recognized, the individual generally receives no specific direction for scholarly activity, but rather a general incentive to do scholarly work.

## AN EXAMINATION OF FREQUENCIES OF INCIDENTS

Phase and Action Categories

For each action category, the number of reported incidents that led to the facilitation or hindrance of the different phases of scholarly activity are detailed in Table 8.

From an examination of the frequency of reported incidents, the major trends of the data are reasonably clear. The first group of action categories cluster around the phase category "scholarly idea." Specifically, the action categories of reading or studying, scholarly activities, practical activities, discussion, and advice lead primarily to a scholarly idea. The exception is advice, which leads to a scholarly project as well.

The second group of action categories lead to the phases of scholarly design and research proposal, scholarly research and data collection, scholarly analysis, scholarly product, and scholarly project. Specifically, the action categories of funds, time, access to data, information, reference materials, space and non-computer equipment, computer services, typing, xeroxing, and mailing services, research assistance, critical evaluation and commentary, other forms of practical assistance, skills, and bureaucratic procedures are linked to all the scholarly activity phases, except the scholarly idea.

TABLE 8: FREQUENCY OF REPORTED INCIDENTS FOR ACTION CATEGORIES AND PHASE CATEGORIES

Action Categories	Phase Categories													
	Idea <sup>1</sup>		Design <sup>2</sup>		Research <sup>3</sup>		Analysis <sup>4</sup>		Product <sup>5</sup>		Project <sup>6</sup>		Total	
	F	H	F	H	F	H	F	H	F	H	F	H	F	H
<u>Direct:</u>														
Reading or studying	14												14	0
Scholarly activities	8												8	0
Practical activities	13												13	0
Discussion	37												37	0
Advice	14	2									5	1	19	3
<u>Enable:</u>														
Funds			1	1	4	2	3	1	9	2	36	6	53	12
Time			2	3	3	5	6	2	8	3	22	47	41	60
Access to data					18	4							18	4
Information			6	4								1	6	5
Reference materials			4						2		8	4	14	4
Space and non-computer equipment					1		1				3	1	5	1
Computer services					1		6	2	1		1	1	9	3
Typing, xeroxing, and mailing services			1	5					3	8			4	13
Research assistance					2	1						3	2	4
Critical evaluation and commentary			6						11	2			17	2
Other forms of practical assistance			13		2	1	2		2		5	1	24	2
Skills					1			1	4		2		7	1
Bureaucratic procedures			1	6								2	1	8
<u>Motivate:</u>														
Opportunities									27	1	20	1	47	2
Approval: recognition and appreciation			1						1	4	8	4	10	8
Expectations			1						6		8	1	15	1
Tangible benefits									3		7	7	10	7
Collaboration			1						7		18	7	26	7
	86	2	37	19	32	13	18	6	84	20	143	87	400	147

Abbreviations: F = Facilitating; H = Hindering

- <sup>1</sup> Scholarly idea
- <sup>2</sup> Scholarly design and research proposal
- <sup>3</sup> Scholarly research and data collection
- <sup>4</sup> Scholarly analysis
- <sup>5</sup> Scholarly product and dissemination
- <sup>6</sup> Scholarly project

The third group of action categories tend to lead to a product or scholarly project, with a few incidents concerned with making a proposal. Specifically, the action categories of opportunities, approval, expectations, tangible benefits, and collaboration are linked with the final phase of scholarly activity, the dissemination of a scholarly product, and the scholarly project.

Primarily, what the frequency of incidents supports is the division of the action categories into three groups. These groups are the same groupings (i.e., action categories which provide direction, action categories which enable one to do scholarly activity, and action categories which provide incentive or motivation), which were identified in the previous analysis.

#### Agent or Agency and Action Categories

Since the examination of the action categories themselves and the frequency of reported incidents categorized by actions and phases indicate three groups of action categories, the frequency of reported incidents categorized by agents or agencies and actions (see Table 9) is examined to see whether the different agent or agency categories are involved with the three groupings.

TABLE 9: FREQUENCY OF REPORTED INCIDENTS FOR ACTION CATEGORIES AND AGENT OR AGENCY CATEGORIES

Action Categories	Agent or Agency Categories													
	Self		Spouse		Colleague		Student		UBC <sup>1</sup>		Outside <sup>2</sup>		Total	
	F	H	F	H	F	H	F	H	F	H	F	H	F	H
<b>Direct:</b>														
Reading or studying	14												14	0
Scholarly activities	8												8	0
Practical activities	13												13	0
Discussion					23		14						37	0
Advice	2	1	1		10	1			4	1	2		19	3
<b>Enable:</b>														
Funds		1							21	4	32	7	53	12
Time	10	28			2	1		3	29	26		2	41	60
Access to data	1				3		1		5	2	8	2	18	4
Information	1				2				2	5	1		6	5
Reference materials	1				6				7	4			14	4
Space and non-computer equipment							1		4	1			5	1
Computer services									9	3			9	3
Typing, xeroxing, and mailing services									3	13	1		4	13
Research assistance		1						1	2	2			2	4
Critical evaluation and commentary			2		14	1	1			1			17	2
Other forms of practical assistance			2		10		2		7	2	3		24	2
Skills	7	1											7	1
Bureaucratic procedures									1	6		2	1	8
<b>Motivate:</b>														
Opportunities					13					2	34		47	2
Approval: recognition and appreciation					5	1	1		2	7	2		10	8
Expectations	7				5				1	1	2		15	1
Tangible benefits		1			1				8	6	1		10	7
Collaboration		2	1		10		15	3		2			26	7
	64	35	6	0	104	4	35	7	105	88	86	13	400	147

Abbreviations: F = Facilitating; H = Hindering

<sup>1</sup> Administrative person, committee, or agency of UBC

<sup>2</sup> Other outside agents and agencies

The category of self appears to connect dominantly with the directing categories. With the exceptions of time and skills, self is scarcely involved in enabling categories and enters motivating categories almost exclusively through self-set expectations.

The spouse category appears to have little involvement with any action categories.

Colleagues seem important in research and related activities, particularly in the early stages involving discussion and advice (directing categories) and the later stages when getting critical evaluation and commentary and other forms of practical assistance (enabling categories). They are in the less formal motivating categories such as providing recognition, establishing expectations, and providing opportunities. Colleagues are also involved in the category of collaboration.

Students reveal a somewhat similar pattern as colleagues, but much weaker (i.e., involved with fewer action categories).

Agents or agencies of UBC have little involvement with the directing categories. However, they are most prominent in the enabler categories and are connected to all the motivating categories.

Outside agents or agencies are not noticeable in the directing categories, but are evident in the enabling categories, primarily funds and access to data, and the motivating category of opportunities.

### Relationships Among Apparently Prominent Categories

In order to identify relationships among what seemed to be prominent categories, it was decided to select those which showed a frequency of six or more when the number of reported incidents in each action category was split out across the agent or agency and phase categories, respectively. It was necessary to select a cut-off point which would avoid the perhaps misleading fine detail (involving possibly only one incident) and at the same time preserve approximately the balance of facilitating and hindering incidents.

This section will highlight: first, the facilitating and hindering relationships involving the directing action categories; second, the relationships involving the enabling action categories; and third, the relationships involving the motivating action categories.

Facilitating relationships among the directing action, agent or agency, and phase categories. The directing action categories (reading or studying, scholarly activities, practical activities, discussion, and advice) are the focus of Table 10. The table exemplifies facilitating relationships among the directing action and phase categories, and the directing action and agent or

TABLE 10: FACILITATING RELATIONSHIPS AMONG THE DIRECTING ACTION, AGENT OR AGENCY, AND PHASE CATEGORIES

Directing Action Categories	Agent or Agency Categories						Phase Categories					
	Self	Spouse	Colleague	Student	UBC <sup>1</sup>	Outside <sup>2</sup>	Idea <sup>3</sup>	Design <sup>4</sup>	Research <sup>5</sup>	Analysis <sup>6</sup>	Product <sup>7</sup>	Project <sup>8</sup>
Reading or Studying	F						F					
Scholarly Activities	F						F					
Practical Activities	F						F					
Discussion			F	F			F					
Advice			F				F					

F: Facilitating relationship = a facilitating incident frequency of 6 or greater

<sup>1</sup> Administrative person, committee, or agency of UBC

<sup>2</sup> Other outside agents and agencies

<sup>3</sup> Scholarly idea

<sup>4</sup> Scholarly design and research proposal

<sup>5</sup> Scholarly research and data collection

<sup>6</sup> Scholarly analysis

<sup>7</sup> Scholarly product and dissemination

<sup>8</sup> Scholarly project

agency categories, where the frequency of categorized incidents was six or greater. The symbol "F" denotes a facilitating relationship and the symbol "H" a hindering relationship.

The table indicates that the faculty member (i.e., category of self) was reported as the responsible agent for reading or studying, scholarly activities, and practical activities, and the scholarly idea, the phase facilitated. The hypothetical portrait emerges of a faculty member who is alert for ideas, actively involves himself or herself in studying, scholarly activity, and practice, and is able to benefit from these activities.

Colleagues and students were cited as the agents who engaged in discussions with faculty members that led to an idea being developed or refined. Colleagues were also reported as giving advice or recommending an action to alleviate the many pressures and problems (ranging from personal to career to practical) in the daily life of a faculty member; and what a faculty member gained from advice was an idea.

No hindering relationships for directing categories appear in Table 10. This is due largely to the interview questions which required on-going scholarly activity for scholarly activity to be hindered. Since directing categories lead primarily to the start of a scholarly project (i.e., scholarly idea), few hindering incidents are going to emerge.

Facilitating and hindering relationships among the enabling action, agent or agency, and phase categories. The enabling action categories (funds, time, access to data, information, reference materials, space and non-computer equipment, computer services, typing, xeroxing, and mailing services, research assistance, critical evaluation and commentary, other forms of practical assistance, skills, and bureaucratic procedures) are the focus of Table 11. This table exemplifies facilitating and hindering relationships among the enabling action and phase categories, and the enabling action and agent or agency categories, where the frequency of categorized incidents was six or greater. The symbol "F" denotes a facilitating relationship and the symbol "H" a hindering relationship.

The table indicates that UBC and a variety of federal and provincial government departments and agencies (i.e., category of outside agents or agencies) were reported as the sources of funds, and the product and project were the outcomes facilitated. The federal and provincial governments were responsible also for the absence of funds, and it was the scholarly project that the absence of funds hindered.

TABLE 11: FACILITATING AND HINDERING RELATIONSHIPS AMONG THE ENABLING ACTION, AGENT OR AGENCY, AND PHASE CATEGORIES

Enabling Action Categories	Agent or Agency Categories						Phase Categories					
	Self	Spouse	Colleague	Student	UBC <sup>1</sup>	Outside <sup>2</sup>	Idea <sup>3</sup>	Design <sup>4</sup>	Research <sup>5</sup>	Analysis <sup>6</sup>	Product <sup>7</sup>	Project <sup>8</sup>
Funds					F	F H					F	F H
Time	F H				F H				F	F		F H
Access to Data						F			F			
Information							F					
Reference Materials			F		F							F
Space and Non-Computer Equipment												
Computer Services					F				F			
Typing, Xeroxing, and Mailing Services					H						H	
Research Assistance												
Critical Evaluation and Commentary			F					F			F	
Other Forms of Practical Assistance			F		F			F				
Skills	F											
Bureaucratic Procedures					H			H				

F : Facilitating relationship = a facilitating incident frequency of 6 or greater

H : Hindering relationship = a hindering incident frequency of 6 or greater

<sup>1</sup> Administrative person, committee, or agency of UBC

<sup>2</sup> Other outside agents and agencies

<sup>3</sup> Scholarly idea

<sup>4</sup> Scholarly design and research proposal

<sup>5</sup> Scholarly research and data collection

<sup>6</sup> Scholarly analysis

<sup>7</sup> Scholarly product and dissemination

<sup>8</sup> Scholarly project

UBC administration (e.g., department chairmen) and faculty members (i.e., category of self) were reported as the agents responsible for time. The provision of time enabled faculty members to undertake scholarly projects, to do data analysis, or to complete and disseminate the scholarly product. Lack of time was reported to hinder the scholarly project.

Contacts (i.e., category of outside agents and agencies in Table 11) were regarded as agents of facilitation, as they gave access to data. These reported contacts in governments, in foreign countries, in communities, on school boards, and in professional organizations enabled faculty members to engage in scholarly research and data collection.

No prominent agents or agencies emerged as providing information or misinformation; however, the scholarly design was the phase reported facilitated by the provision of information.

Colleagues and librarians (category of administrative person, committee, or agency of UBC) were mentioned as the agents, who either suggested or provided reference materials, which enabled faculty members to undertake scholarly projects. Agencies of UBC were cited as being responsible for the provision of computer services, which facilitated the scholarly analysis phase. UBC was also cited as being responsible for hindering relationships.

Department chairmen and secretaries were responsible for the lack or the poor quality of typing, xeroxing, and mailing services; and the scholarly product was the phase hindered. UBC committees were reported as the agents who established complicated bureaucratic procedures. The scholarly design and research proposal was the phase cited as being hindered by complicated bureaucratic procedures.

Colleagues were recounted as the agents who provided critical evaluation and commentary on faculty members' research designs, proposals, and products (e.g., articles, books, guides, monographs, and artistic works). Colleagues, as well as UBC, were mentioned as providing the various forms of practical assistance, which facilitated faculty members' designs and proposals. The faculty member (i.e. category of self) was reported responsible for developing skills.

Facilitating and hindering relationships among the motivating action, agent or agency and phase categories.

The motivating action categories (opportunities, approval, expectations, tangible benefits, and collaboration) are the focus of Table 12. This table exemplifies facilitating and hindering relationships among the motivating action and phase categories, and the motivating action and agent or agency categories, where the frequency of categorized incidents was six or greater. The symbol "F" denotes a

TABLE 12: FACILITATING AND HINDERING RELATIONSHIPS AMONG THE MOTIVATING ACTION, AGENT OR AGENCY, AND PHASE CATEGORIES

Motivating Action Categories	Agent or Agency Categories						Phase Categories					
	Self	Spouse	Colleague	Student	UBC <sup>1</sup>	Outside <sup>2</sup>	Idea <sup>3</sup>	Design <sup>4</sup>	Research <sup>5</sup>	Analysis <sup>6</sup>	Product <sup>7</sup>	Project <sup>8</sup>
Opportunities			F			F				F		F
Approval: Recognition and Appreciation					H							F
Expectations	F									F		F
Tangible Benefits					F	H						F H
Collaboration			F	F						F		F H

F : Facilitating relationship = a facilitating incident frequency of 6 or greater

H : Hindering relationship = a hindering incident frequency of 6 or greater

<sup>1</sup> Administrative person, committee, or agency of UBC

<sup>2</sup> Other outside agents and agencies

<sup>3</sup> Scholarly idea

<sup>4</sup> Scholarly design and research proposal

<sup>5</sup> Scholarly research and data collection

<sup>6</sup> Scholarly analysis

<sup>7</sup> Scholarly product and dissemination

<sup>8</sup> Scholarly project

facilitating relationship and the symbol "H" a hindering relationship.

Colleagues and professional organizations (i.e., category of other outside agents and agencies) were cited as providing opportunities and it was the product and scholarly project which these opportunities facilitated. Self (i.e., faculty member) was reported to establish expectations which facilitated the product and project.

UBC department chairmen and committees were reported to be responsible for lack of approval and disapproval. UBC also reportedly offered or failed to offer such tangible benefits as tenure, promotion, and money and the scholarly project was facilitated or hindered. Colleagues and students were cited as collaborating with faculty members and the scholarly project and product were facilitated. Lack of collaboration was reported to hinder the scholarly project.

#### SUMMARY

A preliminary exploration of relationships among categories was undertaken. First, there was an examination of the action categories themselves. Second, frequencies of reported incidents were examined. Both types of examinations were undertaken to gain a more complete picture of the action category scheme.

The examination of the action categories themselves revealed that they could be grouped under one of three superordinate categories: direct, enable, or motivate. The examination of frequency of incidents, where the reported incidents were categorized by actions and phases, supported the division of action categories into the previously identified groupings. A subsequent examination of frequency of incidents, where reported incidents were categorized by actions and agents or agencies, indicated that the categories of self, colleague, and student have impact on the directing action categories; self, colleague, UBC, and outside agents and agencies have impact on the enabling action categories; and self, colleague, student, UBC, and outside agents and agencies have impact on the motivating action categories.

The final analysis, which identified relationships among apparently prominent categories (i.e., categories which showed a frequency of six or more when the number of reported incidents in each action category was split out across agent or agency and phase categories), substantiated the relationships discerned in earlier analyses, and provided specific detail on how these relationships are worked out.

Qualifying issues are taken up in the following chapter, together with a discussion of reliability and validity.

## CHAPTER 6

## RESULTS III: RELIABILITY, VALIDITY, AND OTHER QUALIFYING ISSUES

This chapter is primarily concerned with questions of reliability and validity. Secondly, other qualifying issues concerning the data will be discussed.

## RELIABILITY AND VALIDITY

Developing a scheme of categories is one task, determining that the category scheme is valid and reliable is another task. Questions of reliability and validity do not come to an end. Rather, a category scheme can be defended against doubts that arise, but this would not mean all doubts had been resolved. New doubts can always arise against which a defense must be tried and assessed. Judgments of reliability and validity are not likely to be absolute, but rather tentative. Accordingly, a range of prominent kinds of questions are examined in this section. If these questions are successfully resolved, then a reasonable warrant would exist for the reliability and validity of the category scheme. This section predominantly focuses on the action category scheme, as the study was mainly concerned with this scheme.

### Reliability of the Action Category Scheme

Is the action category scheme reliable in the sense that independent judges can use the categories consistently to place incidents? This question differs from other questions of reliability with which it might be confused. For instance, is the critical incident interview reliable? Flanagan (1954) and Andersson and Nilsson (1964) provide evidence that similar incidents are elicited from people responding to different interviewers, responding to a questionnaire, and upon re-interviewing people after an interval of time. Along with its long history of successful use in a variety of fields (e.g., Dachelet et al., 1981), these findings provide reasonable grounds for interview reliability.

As another instance, is the method of forming categories reliable? To answer the question, it might be pointed out that the method of searching for similarities and differences is characteristic of categorization. That is just what one must do to form categories. But in the end, the argument cannot be made that this action category scheme is the only one that could be justifiably formed, but that it fits the data and this can be determined largely by whether or not independent judges can use the categories consistently to place incidents (Andersson and Nilsson, 1964).

Sixty-nine incidents were drawn for the judges. Two-thirds were facilitating and one-third were hindering, matching the proportion of facilitating incidents (400) to hindering incidents (147). The incidents were randomly drawn from the total number in quasi-proportion. For example, the category of funds had many incidents and consequently was represented by five incidents in the sample. The category of bureaucratic procedures had few incidents and was represented by two incidents, the minimal number for each category. Numbers were not drawn proportionally, because this would have resulted in an unmanageable number of incidents for the judges to categorize.

Since the incidents were to be categorized in three separate ways, the incidents were typed on three-by-five inch index cards with the agent or agency near the top of the card, what the agent did (the action) in the middle, and the outcome (phase) at the bottom. A pilot study was conducted to get a clearer sense of the appropriate format. For instance, in the pilot study, judges received a prototypical incident for each category and a description of the range. However, the presentation of prototype and range for each category appeared to be unnecessary and an attempt was made to determine if judges could use the category scheme with minimal knowledge of the categories.

The judges were two faculty members and one graduate student. Two were male and one was female. Judges were given the rating task in their own homes and the interview lasted approximately an hour. After a brief description of the study, judges were given the following instructions:

The incidents have been categorized in three ways, according to the agent or agency responsible, what the agent or agency did that was so helpful or hindering, and according to the phase of scholarly activity that was facilitated or hindered.

Your task will be to categorize sixty-nine incidents, forty-six facilitating and twenty-three hindering. Here is a list of agent and agency categories, action categories, and phase categories. And on these cards are the sixty-nine incidents. First, read the names of the categories and ask any questions you wish. (As the judge read, categories were characterized and examples added, if necessary). Now read each incident individually and categorize each in three ways: 1) responsible agent or agency, 2) the actions of the agent or agency, and 3) the phase of scholarly activity that was facilitated or hindered. You are to record the number of the incident beside the correct agent or agency category, phase category, and action category.

Each judge was provided with three separate sheets of paper on which the three category schemes were recorded in column. Beside each category was a line on which to record numbers. The categorization of agents or agencies and phases was extremely rapid, largely because there are many identical matches such as colleague with the category of colleagues. What the agent or agency did (actions) were categorized more slowly, yet still quickly. One judge averaged about four categorizations per minute while another averaged about three per minute and the third averaged about

two. Table 13 records the percentage of agreement between the researcher's and the judges' placement of incidents in the categories in each category scheme. As can be seen, the

TABLE 13: RELIABILITY OF CATEGORY SCHEMES

Judges	Percentage of Agreement		
	Agent or Agency Categories	Action Categories	Phase Categories
Faculty Member	99%	93%	93%
Faculty Member	100%	81%	99%
Graduate Student	100%	97%	99%
Average Inter-rater Reliability	99%	90%	97%

reliability of categorization exceeded 80% for each judge. Agreement with respect to agent or agency categories and phase categories was nearly perfect, while the more complex action categories appear highly reliable, with an average agreement at 90%.

Of particular importance, the high reliability (Sulzer-Azaroff & Mayer, 1977) demonstrated by these judges provides warrant for the claim that the action category scheme can be used in a consistent manner by judges. That is, independent judges can differentiate and integrate

incidents in about the same way as the investigator using these sets of action categories.

An interview inquiry with the judges into the nature of the differences between their placement of incidents and the researcher's placement provides indirect support, for the differences were largely ones of haste. There were some ambiguous or borderline incidents, which is to be expected, but most incidents were not of this nature. Some numbers were listed twice. Some were not listed. In one incident, a judge assumed the researcher must have funds to hire a research assistant and placed the incident under funds rather than research assistance. In another, the judge overlooked funds, instead focusing on what funds provide, such as computer time. Most of the differences stem from the judges focusing on trigger words to the neglect of the whole incident. For example, in one incident, a paper (not the faculty member's paper) was discussed in a class of graduate students, and the faculty member got ideas from critiquing the paper. Upon spotting the word "critiquing", the judge placed it under critical evaluation and commentary rather than discussion. One last difference was due to hasty reading of categories by the judges. For instance, typing is a form of practical assistance. One judge indicated that he forgot there was a category of typing, and placed the incident under other forms of practical assistance.

In summary, judges demonstrated a reasonably high degree of reliability in categorizing incidents, and the differences between the judges' placement of incidents and the researcher's placement were largely ones of haste.

### Validity of Action Categories

The question of validity of the action categories concerns the extent to which the categories are sound or well-founded. Although the validity of the action categories is different from the validity of the category scheme as a whole, there is considerable overlap. A valid category scheme would desirably contain valid categories. However, there is a difference. If one discovered that two or three categories were not well-founded or sound, the category scheme would not necessarily be invalidated. Rather, it would be adjusted to accommodate this information. Questions of validity regarding the category scheme will be reserved for the next section. In this section, evidence is supplied to support the soundness of the action categories.

Categories are formed because of the similarity of a group of incidents reported by different people. That is, a category is formed by the researcher as a result of people independently reporting the same kind of event. Were one person to report an incident, it might be dismissed. But when several people report the same kind of incident, it greatly increases the likelihood that a category is

well-founded. This form of validity is inherent in the Critical Incident Technique. A single person may be accused of distortion or fabrication regarding a single incident, but charges of distortion or fabrication begin to lose force when a number of people independently report the same thing. Agreement among independent people is one criterion for objectivity (Kaplan, 1964). In this study, the basis of agreement was constituted by people independently reporting the same kind of event.

For each category, the number of faculty members reporting an incident or incidents was divided by the total number of faculty members in the study and multiplied by 100 (see Table 14). These percentages indicate a participation rate in each category. Those action categories with highest participation rates receive the strongest confirmation, while those with lowest participation rates receive the weakest confirmation. The participation rates ranged from a low of 12% for research assistance to a high of 85% for time. Categories with a 70% to 80% participation rate were time, funds, and opportunities. The categories of discussion, access to information, other forms of practical assistance, and collaboration have a 40% to 50% participation rate.

There is also another type of agreement that suggests soundness, and that is the agreement of opposites. In this study, the categories were formed from the

TABLE 14: PARTICIPATION RATE IN EACH ACTION CATEGORY

Action Categories	f <sup>1</sup>	PR <sup>2</sup>
<u>Direct:</u>		
Reading or studying	13	32%
Scholarly activities	8	20%
Practical activities	11	27%
Discussion	24	59%
Advice	16	39%
<u>Enable:</u>		
Funds	34	83%
Time	35	85%
Access to data	18	44%
Information	7	17%
Reference materials	13	32%
Space and non-computer equipment	6	15%
Computer services	9	22%
Typing, xeroxing, and mailing services	12	29%
Research assistance	5	12%
Critical evaluation and commentary	15	37%
Other forms of practical assistance	18	44%
Skills	6	15%
Bureaucratic procedures	7	17%
<u>Motivate:</u>		
Opportunities	29	71%
Approval: recognition and appreciation	13	32%
Expectations	13	32%
Tangible benefits	16	39%
Collaboration	21	51%

n=41

<sup>1</sup> f = Frequency = number of faculty members reporting an incident or incidents in a category

<sup>2</sup> PR = Participation rate  
= (f/total number of faculty members in the study)X100

facilitating incidents, with the hindering incidents being encompassed by the same categories. However, in developing a set of categories, it is not required that facilitating and hindering incidents be encompassed by the same categories. Yet when this does occur, the facilitation tends to confirm the hindrance and vice versa. For example, consider the category of approval. When faculty members received recognition or appreciation, they experienced an incentive to do more scholarly work. As well, when they did not receive recognition or received deprecation, they either tended to lose incentive generally or for the particular line of scholarly activity being conducted. The opposing incidents strengthen one another and support the soundness of the whole category. The categories encompass opposites to some extent, and mutually reinforce their soundness, with the exception of directing categories. These categories are a special case that will be discussed later in this chapter.

With this set of action categories serving as cues for memory, a random 10% of the sample were re-interviewed to see if they could recall incidents for each category. While each person did not recall incidents for every category, since some action categories were not important to their work (e.g., space is not relevant for one who does not need additional space for scholarly activity), most were able generally to recall incidents amply and easily for the categories. For example, they could recall when they had

received an idea from studying, from their prior scholarly activities, from practical activities, from discussion, and from direct advice.

It is not enough that people report the same kinds of incidents, but that they also be in a position to make first-hand reports. Three sources (a three year listing of research grant awards, a three year listing of project submissions to the Human Subjects Committee, and the dean's submission for the President's 1981-82 Report on Research) were checked to see if faculty members who participated in this study actually engaged in scholarly activity. According to these sources, thirty-six of the forty-one faculty members either received a research grant award, submitted an application to the Human Subjects Committee (any listing having a student co-investigator was eliminated, to avoid crediting a faculty member with a student dissertation or thesis), or was reported by the dean (i.e., department head) as undertaking scholarly activity. Twenty-eight of the faculty members were listed in two sources.

Of those few who were not actively engaged in scholarly activity, two made this clear to the interviewer at the very beginning of the interview. These two interviews produced only two incidents, one for each person, considerably fewer than the average of 13.4 incidents per faculty member. It may be concluded that the faculty

members were in a position to report first-hand incidents and those who were doing scholarly activity reported the most incidents. Agreement in types of incidents, then, becomes a more convincing criterion for the validity of the categories.

Perhaps the major qualification of this conclusion is that the categories derive from self-report. Specifically, is self-report a dependable means for discovering what actually facilitates and hinders?

There is growing evidence that self-reports are accurate and can be used to estimate what might have been achieved by objective measures (e.g., Borgen and Seling, 1978). Mischel (1977) captures the current revision of attitude toward self-report very well. He notes that people are the best experts on themselves.

These claims notwithstanding, other kinds of evidence to substantiate the self-report categories are useful. One source of evidence is face validity. The action categories seem plausible; they agree with common sense or expectation. More importantly, one can see how each action category could facilitate. For example, receiving funds facilitates scholarly activity. Funds could allow one to pay for subject participation, to travel for data collection, and to hire a research assistant. Computer services could permit complicated analyses in a very brief time. An opportunity to publish a book provides

an incentive for writing one. All of the action categories identified in this study are quite clear in indicating generally how they might facilitate or hinder scholarly activity.

A second source of evidence was provided by a department head who used the action category scheme. The department was given a list of the action categories and a brief definition of each category. This information was used by the department head to guide a discussion assessing the department's scholarly needs. As a result of the discussion, the department head strongly endorsed the action category scheme as a useful checklist for administrators, who are attempting to facilitate scholarly activity in their departments or schools.

Judgment and logical analysis is the third source of evidence. This analysis is based in part on such guidelines in measurement literature as those provided by Kerlinger (1964) and Cronbach (1971). Kerlinger (1964:446) states that "content validation . . . or representativeness . . . consists essentially in judgment". Individuals are asked to bring relevant experience to bear (Cronbach, 1971:475). For example, Henslowe in her 1977 doctoral study established a formal validation of an information base by asking school librarians to make judgments about the information base.

In this study, Canadian Deans of Education were asked to make judgments about the twenty-three action categories. The thirty-three deans were sent a description of the action categories and asked to undertake two tasks. First, they were asked whether they agreed, disagreed, or were undecided that the presence of each factor (i.e., action category) facilitated the conduct of some form of scholarly activity (see Rating Form I in Appendix C). Second, they were asked whether they agreed, disagreed, or were undecided that the absence of each factor (i.e., action category) hindered the conduct of some form of scholarly activity (see Rating Form II in Appendix C).

One mailing and one follow-up mailing were used. Responses were received from thirty of the thirty-three deans. One of these responses declined participation, one was only a partial response. Thus, twenty-eight usable returns were received, a usable return rate of 85%. Table 15 shows details.

For each action category, the number of deans that agreed, disagreed, or were undecided that the presence of the category facilitated the conduct of some form of scholarly activity was divided by the total number of deans making judgments and multiplied by 100 (see Table 16). Those action categories with the highest percentages of agreement receive the strongest confirmation, while those with the lowest percentages of agreement or high percentages of disagreement or undecidedness receive the weakest

TABLE 15: NUMBER AND PERCENT OF RATING FORM RETURNS  
AND USABLE RATING FORMS

	No.	%
Received From Original Mailing (to 33 Deans)	18	55
Received From Follow-up Mailing	12	36
Total Returns	30	91
Responded but did not complete rating forms	1	3
Responded but rating forms nonusable	1	3
Usable Rating Forms	28	85

confirmation. The percentages of agreement ranged from a low of 71% for the categories of space and non-computer equipment, computer services, uncomplicated bureaucratic procedures and tangible benefits to a high of 100% for reading or studying and opportunities. The average percentage of agreement was 85.4. Categories with a 80-90% agreement were prior scholarly activities, participation in practical activities, discussion, funds, time, access to data, information, reference materials, research assistance, critical evaluation and commentary, other forms of practical assistance, skills, recognition and appreciation, expectations, and collaboration. The percentages of disagreement ranged from 18% for tangible benefits to 0% for the categories of reading or studying, participation in practical activities, discussion, advice, research

TABLE 16: THE NUMBER AND PERCENTAGE OF DEANS THAT AGREED, DISAGREED, OR WERE UNDECIDED THAT THE PRESENCE OF EACH ACTION CATEGORY FACILITATED THE CONDUCT OF SOME FORM OF SCHOLARLY ACTIVITY

Action Category	Agree No. (%)	Disagree No. (%)	Undecided No. (%)
Reading or Studying	28 (100.0)	-	-
Prior Scholarly Activities	23 (82.1)	3 (10.7)	2 (7.1)
Partic. in Practical Activities	25 (89.3)	-	3 (10.7)
Discussion	25 (89.3)	-	3 (10.7)
Advice	22 (78.6)	-	6 (21.4)
Funds	23 (82.1)	3 (10.7)	2 (7.1)
Time	26 (92.9)	1 (3.6)	1 (3.6)
Access to Data	23 (82.1)	3 (10.7)	2 (7.1)
Information	24 (85.7)	2 (7.1)	2 (7.1)
Reference Materials	25 (89.3)	2 (7.1)	1 (3.6)
Space & Non-computer Equipment	20 (71.4)	3 (10.7)	5 (17.9)
Computer Services	20 (71.4)	2 (7.1)	6 (21.4)
Typing, Xeroxing, & Mailing	22 (78.6)	2 (7.1)	4 (14.3)
Research Assistance	26 (92.9)	-	2 (7.1)
Critical Evaluation & Commentary	24 (85.7)	-	4 (14.3)
Other Forms of Pract. Assistance	23 (82.1)	1 (3.6)	4 (14.3)
Skills	25 (89.3)	-	3 (10.7)
Uncomplicated Bureaucratic Proc.	20 (71.4)	4 (14.3)	4 (14.3)
Opportunities	28 (100.0)	-	-
Recognition & Appreciation	26 (92.9)	1 (3.6)	1 (3.6)
Expectations	26 (92.9)	-	2 (7.1)
Tangible Benefits	20 (71.4)	5 (17.9)	3 (10.7)
Collaboration	26 (92.9)	1 (3.6)	1 (3.6)

assistance, critical evaluation, and commentary, skills, opportunities and expectations. The percentages of undecidedness ranged from 21% for the categories of advice and computer services to 0% for reading or studying and opportunities.

Table 17 indicates the deans' judgment about the absence of each action category. The percentages of agreement ranged from a low of 71% for the categories of participation in practical activities, advice, funds, space and non-computer equipment, computer services, typing, xeroxing and mailing services, uncomplicated bureaucratic procedures, and tangible benefits to a high of 100% for reading or studying. The average percentage of agreement was 79.0. Categories with a 80-90% agreement were prior scholarly activities, time, access to data, reference materials, skills, opportunities, recognition and appreciation, and expectations. The percentages of disagreements ranged from 18% for participation in practical activities, uncomplicated bureaucratic procedures and tangible benefits to 0% for reading or studying. The percentages of undecidedness ranged from 18% for the categories of advice, computer services, typing, xeroxing and mailing services, and other forms of practical assistance to 0% for reading or studying, time and skills.

TABLE 17: THE NUMBER AND PERCENTAGE OF DEANS THAT AGREED, DISAGREED, OR WERE UNDECIDED THAT THE ABSENCE OF EACH ACTION CATEGORY HINDERED THE CONDUCT OF SOME FORM OF SCHOLARLY ACTIVITY

Action Category (n=28)	Agree No. (%)	Disagree No. (%)	Undecided No. (%)
Reading or Studying	28 (100.0)	-	-
Prior Scholarly Activities	23 (82.1)	3 (10.7)	2 (7.1)
Partic. in Practical Activities	20 (71.4)	5 (17.9)	3 (10.7)
Discussion	22 (78.6)	3 (10.7)	3 (10.7)
Advice	20 (71.4)	3 (10.7)	5 (17.9)
Funds	20 (71.4)	4 (14.3)	4 (14.3)
Time	27 (96.4)	1 (3.6)	-
Access to Data	23 (82.1)	2 (7.1)	3 (10.7)
Information	22 (78.6)	2 (7.1)	4 (14.3)
Reference Materials	23 (82.1)	3 (10.7)	2 (7.1)
Space & Non-computer Equipment	20 (71.4)	4 (14.5)	4 (14.5)
Computer Services	20 (71.4)	3 (10.7)	5 (17.9)
Typing, Xeroxing, & Mailing	20 (71.4)	3 (10.7)	5 (17.9)
Research Assistance	21 (75.0)	3 (10.7)	4 (14.3)
Critical Evaluation & Commentary	22 (78.6)	2 (7.1)	4 (14.3)
Other Forms of Pract. Assistance	21 (75.0)	2 (7.1)	5 (17.9)
Skills	26 (92.9)	2 (7.1)	-
Uncomplicated Bureaucratic Proc.	20 (71.4)	5 (17.9)	3 (10.7)
Opportunities	24 (85.7)	3 (10.7)	1 (3.6)
Recognition & Appreciation	23 (82.1)	3 (10.7)	2 (7.1)
Expectations	23 (82.1)	2 (7.1)	3 (10.7)
Tangible Benefits	20 (71.4)	5 (17.9)	3 (10.7)
Collaboration	21 (75.0)	4 (14.3)	3 (10.7)

An examination of the percentages indicates for most categories that there is a high degree of consensus that they facilitate and hinder the conduct of some form of scholarly activity. The average percentages of agreement were 85.4 and 79.0%, respectively.

For a few categories, there is a somewhat less than a high degree of consensus. For example, the categories of space and non-computer equipment and computer services received a 71% agreement. Written comments by the deans suggest why there is a lower percentage of agreement for these categories. For example, several deans stated that certain types of scholarly projects do not require computer services nor space. Hence, the undecided or disagreed judgments, as computer services and space are not necessary for all forms of scholarly activity. Additional comments by several deans suggest that they were focusing on a particular group of faculty members when judging the category, tangible benefits (another category with 71% agreement). They stated that in their experience, productive faculty members' scholarly activity is not necessarily facilitated by the presence or hindered by the lack of tangible benefits, because these faculty members engage in scholarly activity regardless of any tangible benefit.

For several categories, the judges were more supportive of categories for facilitating reasons than for hindering reasons. For example, participation in practical

activities received an 89% agreement for facilitating scholarly activity, while the absence of participation in practical activities received a 71% agreement for hindering scholarly activity. Research assistance and collaboration are two other categories with similar percentage differences. Written comments suggest why there is this difference in agreement. The comments again indicate that the deans were thinking about one type of scholarly activity or a particular group of faculty members or both. For example, for faculty members interested in problems of practice, engaging in practical activities can lead to the development of an idea. However, for faculty members not interested in problems of practice, non-participation in practical activities probably does not hinder their scholarly activity, as they are likely to encounter their ideas from other sources.

A fourth source of collaborative evidence is other studies. This study not only supports previous research but previous studies (which were reviewed in Chapter 2) provide support for ten of the twenty-three action categories, specifically: scholarly activities (Pelz and Andrews, 1966), funds (Allison and Stewart, 1974; Meltzer, 1956; Thorpe, 1970), time (Konrad, 1983; Sheffield, 1982; Simerly, 1973; Thorpe, 1970), space and non-computer equipment (Thorpe, 1970), typing, xeroxing, and mailing services (Thorpe, 1970), critical evaluation and commentary (Finklestein,

1982; Thorpe, 1970), approval: recognition and appreciation (Allison and Stewart, 1974; Cole and Cole, 1967; Crane, 1965; Fenker, 1977; Pelz and Andrews, 1966), expectations (DeVries, 1975), tangible benefits (Blau, 1973; Fenker, 1977; Freeman, 1979; Pelz and Andrews, 1966; Thorpe, 1970; Tuckman, 1979), and collaboration (Blackburn et al., 1981; Cameron, 1978; Finklestein, 1982; Reskin, 1979).

#### Validity of the Action Category Scheme

Is the action category scheme comprehensive? As noted by Andersson and Nilsson (1964), comprehensiveness is an important question. This question was answered in three ways. In the first check, the researcher withheld the last 5% of the incidents until the rest had been categorized. When categories had been formed, the withheld incidents were brought back and classified by graduate students in a doctoral seminar. It was found that all withheld incidents fitted within the scheme of categories. That is, no new categories had to be formed.

The second check involved randomly dividing the incidents into blocks of fifty-four incidents. Each block was examined to see how many of the twenty-three action categories the incidents accounted for. It was found that the number of categories used rose over the first few blocks and then leveled off, with no categories being employed for the first time in the later blocks. It can be assumed, then, that the

collection of incidents was not stopped too abruptly, since only a fraction of the total number was required to generate the set of categories.

Third, a random ten percent of the sample was re-interviewed with instructions to produce additional incidents. Of those produced, all fitted under an existing category.

The same procedures were used to check the agent and agency category scheme and the phase category scheme with the same results.

In summary, the three checks provide reasonable evidence for the comprehensiveness of the action category scheme. However, it must be noted that the claim is provisional and must remain so. There is always the possibility of discovering new categories. For example, prior to the study, it was anticipated that sickness would constitute a category, yet it did not. Two incidents involved sickness, and in both, sickness was the context for the incidents. For example, while recovering from an illness, one faculty member read extensively and generated ideas for a scholarly project. Another category that was anticipated from the literature review was mentorship. But in searching the incidents, there was only one incident that could be construed in this way and it was not without ambiguity. Rather, people focused upon specific incidents rather than global relationships. Mentorship is implicitly

involved in the category scheme of actions, in the sense that a certain group of action categories would describe the mentor relationship.

A final issue in comprehensiveness concerns the level of abstraction of the action category scheme (Flanagan, 1954). In forming categories, one strives for a level of abstraction that establishes order and clearly subsumes incidents. Too low a level of abstraction courts chaos, the possibility of having as many categories as incidents. Too high a level of abstraction courts vagueness and clouds important distinctions. In forming categories at the right level, one seeks to be guided by prototypes. Staying attuned to prototypes of whole incidents rather than disproportionately emphasizing isolated features was a guiding rule in category formation. However, the possibility of categories of a lower level of abstraction always exists, and with it, the possibility of an increase in the number of categories.

#### OTHER QUALIFYING ISSUES

##### Directing Action Categories

The action categories encompass opposites, with the exception of the directing categories. These categories are a special case. Since one can only hinder what is already in progress, hindering incidents involving direction were

excluded as speculative, aside from incidents concerning advice. For example, the research questions of the interview specified the hindrance of an activity in progress. But having direction hindered in the form of not having an idea is then excluded. One cannot hinder what is not in progress. Even so, some quite reasonable (i.e., marginal) incidents emerged, although they were few in number. And this low number is an artifact of the delimitations of the study.

I am teaching in an area that is not a substantive research area, so that any preparation for the classes does not lead to any research ideas.

This hindering incident is one of several incidents that emerged supporting the importance placed on relevant reading and studying as a source of ideas.

I miss not having access to graduate students because I found them helpful in refining research ideas.

Three similar hindering incidents emerged that strongly indicated that the lack of discussion was a hindrance to faculty members' development of ideas. Considering the relatively large number of incidents reported that facilitate ideas (see Table 8, p. 88), this seems quite plausible. Likewise, it seems plausible that lack of prior scholarly activity to build on does not assist the stimulation of ideas and that a lack of practical contact removes one source of stimulation of ideas.

### Scholarly Project Category

The use of the term "scholarly project" reflects the level of what a faculty member said. Sometimes the person referred to a specific unit, other times the person referred to a general unit — the scholarly project. For example, collaboration was an action that was reported generally by faculty members as facilitating and hindering the scholarly project. For this reason, the scholarly project category is different. The incidents classified under scholarly project do not refer to a specific phase, instead, they may be thought to encompass some or most phases of scholarly activity.

### Frequency Data

In order to gain a more complete picture of the action category scheme, a preliminary exploration of relationships among categories was undertaken. Frequencies of reported incidents were examined. However, no statistical tests were performed because the frequency data were not independent. That is, the incidents did not have an equal probability of occurring. As Kerlinger (1964:134) noted, statistical tests assume independence, and if the independence is violated, statistical tests lack validity. While statistical tests could not be conducted and the examinations be regarded with confidence, the frequencies in

this study warranted a preliminary exploration to at least suggest possibilities.

#### SUMMARY

Reliability and validity of the action category scheme have been examined from different perspectives. Independent judges can use the categories consistently to place incidents. The categories were formed by the researcher as a result of people independently reporting the same kind of event. A number of the categories are supported by other types of evidence (face validity, judgmental and logical analysis, and other studies). The action category scheme seems to be reasonably comprehensive.

It was also pointed out: 1) even though the interview questions disallowed the directing action categories' hindering incidents (excluding the category of advice), several reasonable incidents emerged; 2) the term "scholarly project" refers to a general unit and not a specific phase of scholarly activity, therefore, the incidents classified under this category may be thought to encompass some or most phases of scholarly activity; and 3) statistical tests were not performed with the frequency data, as the data were not independent.

## CHAPTER 7

## SUMMARY, CONCLUSIONS, IMPLICATIONS, AND RECOMMENDATIONS FOR FURTHER RESEARCH

This chapter is concerned with the potential of the action category scheme for the conceptualization of faculty development and for the administration of faculty development programs concerned with scholarly activity. A summary, the conclusions and their implications, and recommendations for future research are presented.

## SUMMARY

This study was concerned with developing and exploring a reasonably comprehensive scheme of categories which describes, from the perspective of faculty members, what facilitates and hinders their scholarly activity. Forty-one University of British Columbia education faculty members in three career stages were asked directly (by way of a critical incidents interview) for reports of events that facilitated or hindered their own scholarly activity.

Each interview was taped or extensive notes were taken. Critical incidents were later extracted from the taped interview or notes, resulting in a total of 547 usable incidents, of which 400 were facilitating and 147 were hindering. These reported incidents were categorized in

three separate ways: by the agent or agency responsible, by what the agent or agency did (the action), and by the phase of scholarly activity that was facilitated or hindered.

The six agent or agency categories were: self; spouse; colleague; student; administrative person, committee, or agency of The University of British Columbia; and other outside agents and agencies. The twenty-three action categories were: reading or studying; scholarly activities; practical activities; discussion; advice; funds; time; access to data; information; reference materials; space and non-computer equipment; computer services; typing, xeroxing, and mailing services; research assistance; critical evaluation and commentary; other forms of practical assistance; skills; bureaucratic procedures; opportunities; approval: recognition and appreciation; expectations; tangible benefits; and collaboration. The six phase categories were: scholarly idea; scholarly design and research proposal; scholarly research and data collection; scholarly analysis; scholarly product and dissemination; and scholarly project. Of the three category schemes, the action category scheme is the most important, because the action categories provide the bases for answering the research question, "What do UBC education faculty members report as facilitating and hindering their scholarly activity?".

To gain a more complete picture of the action category scheme, a preliminary exploration of relationships among categories was undertaken. First, there was an examination of the action categories themselves, which revealed that they could be grouped under one of three superordinate categories: direct, enable, and motivate. Second, frequencies of reported incidents were examined. The categorization of reported incidents by actions and phases supported the division of the action categories into the three groupings. The categorization of reported incidents by actions and agents or agencies indicated that the categories of self, colleague, and student have impact on the directing action categories; self, colleague, UBC, and outside agents or agencies have impact on the enabling action categories; and self, colleague, student, UBC, and outside agents or agencies have impact on the motivating action categories. The final analysis, which identified relationships among apparently prominent categories (i.e., categories which showed a frequency of six or more when the number of reported incidents in each action category was split across agent or agency and phase categories) substantiated the relationships discerned in earlier analyses, and provided specific detail on how these relationships are worked out.

To determine whether reasonable warrant existed for the reliability and validity of the action category scheme, several questions were examined. To test for reliability, whether independent judges could use the categories consistently to place incidents, three judges were instructed to categorize a sample of sixty-nine incidents. For each category scheme, the percentage of correct placements was very high, typically over 90%. An examination into the nature of the differences between the judges' placement of incidents and the researcher's placement provided further indirect support for the action category scheme, for the differences tended to be ones of haste.

The question of validity of the action categories concerned the extent to which the categories were sound or well-founded. One source of evidence was participation rates. For each action category, the number of faculty members reporting an incident or incidents was divided by the number of the faculty members in the study. Categories with a 70% to 80% participation rate were time, funds, and opportunities. Another type of agreement suggested soundness and that was the agreement of opposites. In this study, the categories were formed from the facilitating incidents, with the hindering incidents being encompassed by the same categories.

A third source of evidence was provided by a random 10% of the sample, who were re-interviewed to see if they could recall new incidents. They were generally able to recall incidents for the categories. A check was also made to see if the faculty members in the sample were in a position to make first-hand reports. Three sources, a three year listing of research grant awards, a three year listing of project submissions to the Human Subjects Committee, and the Faculty of Education dean's submission to the President's 1981-82 Report on Research, were checked to see if faculty members who participated in this study were engaged in scholarly activity. Thirty-six of the forty-one faculty members were reported in one or more sources.

Judgmental and logical analysis provided another source of evidence. Canadian Deans of Education were asked to make judgments about the twenty-three action categories. First, they were asked whether they agreed, disagreed, or were undecided that the presence of each factor (i.e., action category) facilitated the conduct of some form of scholarly activity. Second, they were asked whether they agreed, disagreed, or were undecided that the absence of each factor (i.e., action category) hindered the conduct of some form of scholarly activity. The average percentage of agreement was 85.4% that the presence of the categories facilitated scholarly activity and 79% that the absence of the categories hindered scholarly activity. For most action

categories there was a high degree of consensus among the deans that they facilitated and hindered the conduct of some form of scholarly activity. For a few categories there was somewhat less than a high degree of consensus, and for several categories, the deans were more supportive for facilitating reasons, than for hindering reasons.

Two other sources of evidence, face validity and other research studies, provide additional support for a number of the action categories.

The question of the validity of the action category scheme was concerned with comprehensiveness, which was tested in three ways. First, the final five percent of the incidents were withheld until the categories were established. It was found that these incidents readily fitted within existing categories. Second, the incidents were randomly distributed into blocks of fifty-four. Each block was categorized in succession. It was found that the number of categories used rose over the first few blocks, with no categories being employed for the first time in the later blocks. Third, a random 10% of the sample were re-interviewed a second time with instructions to produce new incidents. All new incidents fitted within existing categories. In conclusion, the action category scheme appears to be reasonably comprehensive and is a reliable reflection of the incidents reported, in the sense that three independent judges show high levels of agreement with

the researcher in categorizing incidents. There is warrant for the validity of the action category scheme.

#### CONCLUSIONS AND IMPLICATIONS

Previous research has been valuable in showing that a particular factor or a small set of factors can influence scholarly activity. The present study has shown that there are twenty-three factors (i.e., twenty-three action categories) which conceptualization of faculty development or administration of faculty development programs concerned with scholarly activity should take into account. Thus, the value of the action category scheme is that it offers a broad frame of reference capable of bringing the work of others to a more integrated point and suggesting a more holistic approach to what facilitates and hinders faculty members' scholarly activity.

The research also offers some guidance on how the action category scheme could be used in the conceptualization of faculty development and in the administration of faculty development programs concerned with scholarly activity. From an examination of the findings as a whole, six general conclusions can be drawn concerning the nature of the action category scheme. The following section will present the six conclusions and their implications for administration. The subsequent section will highlight the implications for conceptualization.

## Conclusions and Their Implications for Administration

1. Not all action categories are relevant for every person, project, or phase of a project.

Each person in the re-interview sample did not generate incidents for every action category, because, as the faculty members stated, some categories are not relevant to their work. For example, one faculty member noted that space is not relevant because he does not need additional space for his project. Another faculty member's scholarly project, however, required laboratory space. Faculty members' reports also suggest that the form of assistance is apt to vary from project to project. For example, a faculty member indicated that computer services are not relevant to his qualitative study.

Where incidents were categorized by actions and phases of scholarly activity, the frequency of the incidents indicates that different action categories are relevant for different phases. For example, the directing categories lead primarily to a research idea, while enabling categories encompass all phases of scholarly activity except the scholarly idea, and the motivating categories lead primarily to a product or the project.

The question of relevance of action categories cannot be adequately answered in the abstract, but answered only with a concrete point of reference in mind. Since points of reference (person, project, and phase) change, answers are apt to vary considerably and to vary over time. For these reasons, it would be imprudent for administrators to use these action categories without a concrete point of reference. Certainly, the action categories should be useful for general administrative planning regarding the facilitation of scholarly activity, but there must be an assessment of the immediate situation, or inappropriate action categories might be stressed and the appropriate action categories neglected.

2. Not all agent or agency categories are involved to a noticeable extent with every action category.

Typically, different agents or agencies can perform the same function. However, the categorization of reported incidents by agents or agencies and actions indicates that not all agent or agency categories are involved to a noticeable extent with every action category. For example, colleagues and students seem important in the directing categories (see Table 9). In contrast, UBC and outside agents and agencies have little impact on these categories; however, they are noticeable in the enabling and motivating categories.

Administratively, the implication is of a flexible set of options which must be taken into account. If administrators are involved with the action category (i.e., the responsible agent), their impact can be potentially direct, as well as indirect. For example, administrators were one of the agents who were reported to provide "time" (see Table 11, p. 96). Administrators can directly influence scholarly activity by providing time, or they can indirectly influence scholarly activity by influencing the other agent who was reported to provide time (i.e., self).

In contrast, administrators can only have an indirect impact if they are not involved with the action category. For example, administrators were not cited as the agents providing critical evaluation and commentary (see Table 11, p. 96). In this example, administrators can indirectly influence scholarly activity by influencing the agent or agency who was reported to provide critical evaluation and commentary (i.e., colleagues).

### 3. The action categories are interrelated.

The incidents indicate that many of the action categories are interrelated. For example, a number of the action categories require funds (a category). Funding enables faculty members to "buy time," pay for research assistance, purchase computer services, pay for typing, etc. Similarly, the category of studying involves the category of

obtaining reference materials. A further example is the category of computer services, which is linked (via computer searches) to the category of reference materials.

The examination of the action categories themselves also directs attention to interrelationships. This examination reveals three distinct groups: action categories which provide direction, action categories which enable one to do scholarly activity, and action categories which provide incentive or motivation.

The implication of interrelationships is direct. In a scheme where parts are interrelated, a change in one part may have an impact on other parts. For example, an administrator in an attempt to increase motivation might encourage people to read more, to discuss ideas, and to seek advice in order to get or refine an idea. Information might partially or occasionally provide opportunities which enhance motivation.

4. The action categories are bipolar in the sense that each actually does contain or may plausibly be said to contain both facilitating and hindering events.

The deans' judgments and the incidents indicate that the same action categories that facilitate scholarly activity also hinder or may plausibly be said to hinder it. It is not the case that one scheme of categories facilitates and a different scheme hinders. For instance, the presence

of time facilitates, while the absence of time hinders scholarly activity. Each action category then can be viewed as an administrative task (but only in part for an administrator cannot do it alone) that is important for facilitating scholarly activity. If the task is successfully fulfilled, scholarly activity is apt to be facilitated. If it unsuccessfully fulfilled, scholarly activity is apt to be hindered. An administrator either facilitates or hinders scholarly activity. One can fulfill each task well or ill, but does not have the option of ignoring it. To clarify this point, it might be thought that an administrator has an option of facilitating scholarly activity or not facilitating scholarly activity (i.e., if the administrator does nothing, no perceptible harm is done; if the administrator does do something, there is apt to be a positive gain). According to the action category scheme, this is not the case. What an administrator does or fails to do has the potential to facilitate and to hinder.

5. The action categories happen or could happen as part of everyday university life.

The incidents and logic suggest that the action categories happen or could happen as part of everyday university life. For example, the daily life of faculty in a university includes advice-giving, discussions, critical

commentary, and collaboration. Similarly, typing services, computer services, and research assistance are on-going activities in a university. Reading or studying, engaging in scholarly activities and practical activities are also routine occurrences in a university. If the categories of actions that facilitate and hinder scholarly activity are aspects of everyday university life, as they predominantly appear to be, than an effective administrative effort to facilitate scholarly activity should be directed toward an improvement of the quality of the on-going daily experience of faculty members doing scholarly activity. This implication does not necessarily exclude the value of special faculty development programs, but it does rather strongly suggest the limits of such efforts. For example, faculty development programs (e.g., Morrill and Spees, 1982) have tended to stress special workshops and projects which are not part of daily life, but a one-time addition to it. Probably, there is potential value in such programs, but they leave untouched the types of events that facilitate scholarly activity on an on-going basis.

Interestingly, Konrad's (1983) survey of faculty development practices in Canadian universities supports the notion that special workshops, seminars, and programs have a limited effect as developmental practices. Only 25% of the

institutions having such practices as workshops, seminars, and programs to help faculty improve their research and scholarship skills reported the practices as being effective or very effective. Similarly, a visiting scholars program was reported as one of the least effective institution-wide practices.

That the action categories which facilitate and hinder or may plausibly be said to hinder scholarly activity happen or could happen as part of the daily life in a university constitutes something of a challenge for the administration of faculty development programs. It involves improving the on-going, daily experience of faculty members doing scholarly activity.

6. There is evidence to suggest that the action categories are useful.

The action categories have been used by one department head to guide a discussion assessing the department's scholarly needs. The categories are potentially useful in several other ways. One way the action categories are useful is that they provide rather specific answers to the questions of what to do to motivate, enable, and direct scholarly activity.

First, what can administrators do to motivate scholarly activity? Administrators can recognize scholarly activity and show appreciation for it. Administrators can

influence expectations both by showing leadership and by directly communicating what is expected. Administrators can try to persuade department committees to award merit pay, promotion, and tenure for scholarly activity.

One category (opportunities) is rather removed from an administrative sphere of influence. However, administrators can suggest names of faculty members to whom colleagues and professional organizations may extend invitations and requests. Administrators can also encourage faculty members to recognize other faculty members' scholarly activities and to communicate faculty or departmental expectations.

For the category of collaboration, the administrative influence is also indirect. Administrators can, however, minimize departmental politics which interfere with collaborative research studies with students. Teaching schedules can be established which enable several faculty members to work collaboratively. New faculty can be helped to locate other faculty with similar scholarly interests. Administrators can also encourage cross-departmental collaboration by formally announcing to departments and schools the scholarly interests and products of faculty members.

Second, what can administrators do to enable scholarly activity? This study indicates that administrators can provide time by minimizing meetings,

minimizing paperwork and signature requirements, by deflecting ad hoc requests, streamlining procedures, and the like. Administrators can arrange teaching assignments to allow free days or overload one term to free the next term for concentrated scholarly activity. They can decrease the load of those who do scholarly activity and increase the load of those who do not. Regarding funding, administrators can lobby governments and agencies for a shorter time frame in granting funds and for less burdensome forms and procedures. They can provide university summer grants to encourage faculty members to focus on scholarly activities rather than teaching, which was reported by faculty members as being done primarily to supplement income. Gaining access to data involved such diverse incidents that there appears to be no one problem to solve, but rather a sensitivity to be cultivated for problems of access, and a desire to cooperate. However, since so many studies involve schools, there is no apparent reason why administrative efforts with school boards or officials cannot be used to regulate and streamline procedures for doing scholarly activity in schools.

The provision of accurate information is crucial for grant proposals. Some universities, such as the Ontario Institute for Studies in Education, have gone further by establishing an office in which a faculty member can receive help in preparing a budget, in selecting a granting agency,

and in writing the proposal. To have a central place where one can receive assistance on all aspects of a proposal clearly seems advantageous. While the provision or suggestion of reference materials stems from several agents, administrators are responsible for library services. Department heads might seek to establish small reading rooms which contain the journals of a field. Administrators can also encourage faculty members to be on the lookout for references which are applicable to colleagues' scholarly activities.

Space and non-computer equipment, computer services, and typing (along with xeroxing, printing, and mailing) services are all influenced by administrators. Given the negative incidents, it seems desirable that administrators monitor services to see that they are done well. For example, rather than ignore lengthy typing delays and error-filled manuscripts, it must be recognized that these are hindrances to the scholarly activity of faculty members, an impediment to one major purpose for which universities exist. Critical commentary by colleagues can be encouraged or even formalized, if necessary. The category of practical assistance included quite diverse incidents, many involving some form of administrative cooperation. Administrators can influence the category of special skills by pairing a faculty member with a special skill with one requiring the particular skill. Finally, administrators can streamline

bureaucratic procedures so that a faculty member can anticipate relative ease rather than complicated "red tape."

Third, what can administrators do to direct scholarly activity? The action categories which provide direction tend to be primarily influenced by self, colleagues, and students. Administrative influence is indirect, except for the category of advice. An administrator can certainly give advice and direction. To stimulate and refine ideas, an administrator can also schedule seminars and discussions involving faculty members and students, initiate contact with practical activities, and suggest that some faculty members help others by participating in discussions and by providing advice. Of the three groups, this one is the most indirect and also the most open to creative innovations.

Another way the action categories are useful is that they have diagnostic value in the sense that they can be used to assess the needs of an individual, a department, and perhaps a faculty. For example, does a particular professor lack incentive, lack direction, or means? If so, which action categories are important? Perhaps the person does not know which action categories are important. That is, one may not fully appreciate how critical commentary can help one to minimize rejections from journals. One may not even realize that one's faltering motivation can be connected to a lack of recognition. The action categories

offer (from an administrative viewpoint) a frame of reference for communication and problem solving regarding scholarly activity.

Another way the action category scheme is useful is that it indicates critical factors for an administrator to monitor. In this regard, the category scheme can be used to check the healthfulness of the environment for scholarly activity. For example, an administrator might monitor the basis for merit pay decisions (a tangible benefit), the time taken to get Human Subjects Committee approval, the quality of typed papers, and so on.

#### The Implications for Conceptualization

In previous research, units of investigation were used which referred to different facets of scholarly activity. For example, some research stressed agents [i.e., they focused on who facilitated or hindered (e.g., Braxton, 1983)], while other research stressed the actions of the agents [i.e., what they did that facilitated or hindered (Cole and Cole, 1967)]. In the present research it was clear that the incidents which were analyzed included reference to three different facets of scholarly activity. It was clear also that these three facets (agent or agency, actions, and outcomes or phases) are interrelated. One clear implication for conceptualizing faculty development concerned with scholarly activity is that the action

categories (what facilitates and hinders scholarly activity) should not be considered in isolation from the agent or agency categories (who facilitates and hinders scholarly activity) and the phase categories (the outcome of scholarly activity that was facilitated or hindered).

Conclusion 1 states that not all action categories are relevant for every person, project, or phase of a project. Conclusion 2 states that not all agent or agency categories are involved to a noticeable extent with every action category. These imply that in using the action categories consideration must be given to the particular features of individual cases. For example, it will be important to recognize that a particular action category might be especially relevant for a particular person on a given type of scholarly project in a certain phase and might not be relevant to another person on a different kind of project in a different phase.

Conclusion 3 states that the action categories are interrelated. The implication of the interrelationships is direct. The action categories are better conceived as parts of a scheme, in which a change in one part of the scheme might affect other parts.

## RECOMMENDATIONS FOR FUTURE RESEARCH

To recognize the above-noted implications for conceptualization is in itself an important step in the development of any future research on faculty development concerned with scholarly activity. There are also, however, a number of specific research targets suggested by the present study. Seven may be considered.

1. A first step was undertaken in the validation of the action categories. Canadian Deans of Education were asked to make judgments about the twenty-three action categories. While they provided support for the action category scheme, the action categories must still be viewed as provisional categories of what actually facilitates and hinders scholarly activity. For this reason, future studies should be conducted which will more fully explore and validate the action categories. Comparative, survey, and experimental designs may all be useful for this purpose.

2. Since an area of possible hindrances (i.e., directing action categories of reading or studying, scholarly activities, practical activities, and discussion) was disallowed by the interview questions, alternative methods should be used to investigate the presence of hindrances which may have been masked in this study.

3. Now that a broad range of action categories has been shown to apply to The University of British Columbia Faculty of Education, one logical next step is to determine general applicability and limitations. To what extent does the action category scheme apply to other faculties of education and to other faculties (e.g., medicine, law, arts) generally? What is the limit? For example, is it the case, as seems likely, that space and non-computer equipment would be much more critical for physical sciences than for education?

4. Since the frequency data were of a dependent nature, alternative methods should also be used to confirm and fully explore the relationships among the action categories and agent or agency and phase categories.

There is growing evidence (e.g., Baldwin, 1979; Blackburn and Lindquist, 1971) that professors differ, for example, in research interests and productivity in different ranks or career stages. Since, the incidents lacked independence, no statistical comparisons could be made in this study between the incidents reported by faculty members in the different career stages. Therefore, future studies should be designed to determine if the different action categories might have differential results for different career stages.

5. Not all agent and agency categories are involved to a noticeable extent with the different action categories (Conclusion 2). Where an administrator is not directly involved with an action category, he or she can potentially have an indirect impact by influencing the responsible agents or agencies. However, the data of the present study give little indication of how an administrator can best influence the responsible agents or agencies. Research on this topic is desirable.

6. Conclusion 3 notes that the action categories are interrelated; and by implication, are best viewed as parts of a scheme, in which changes in one part may effect changes in other parts. How the scheme is affected by diverse types of changes then becomes a topic for research. For example, what happens if an administrative policy succeeds in increasing motivation through incentives such as approval and tangible benefits? Would, for instance, activities that supply direction increase? How exactly are changes apt to ramify?

7. Conclusion 6 indicates that the action categories provide rather specific answers for administrators to the questions of what to do motivate, enable, and direct scholarly activity. However, the category scheme does not indicate how best to accomplish the task. For example, the office established at the Ontario Institute for Studies in Education is one creative response. Any education professor

can go to this office and receive help in identifying a granting agency most likely to fund his or her type of proposal, in preparing a budget, in how to write a proposal for this agency, and so on. The office is conceived as a very active and comprehensive form of assistance in making proposals, quite a leap beyond merely listing agencies or having grant forms on hand. While the category scheme identifies what can be done to facilitate scholarly activity, how best to accomplish this task warrants investigation.

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## APPENDIX A

FACULTY MEMBERS' RECRUITMENT LETTERS  
AND CONSENT FORM

Divisions of Higher Education  
and Educational Administration  
University of British Columbia  
6298 Biological Sciences Road  
South Staff Office Block  
Room 11  
September 20, 1982

Dear \_\_\_\_\_,

You have been randomly selected to participate in my doctoral study. The purpose of the study is to find out what facilitates and hinders U.B.C. education faculty members' scholarly activities.

Participation will involve a forty-five minute interview. In the interview, you will be asked to report incidents in which your scholarly activities were significantly facilitated or hindered. A categorical framework of what facilitates and hinders scholarly activities will be prepared from the incidents.

The benefits to you are indirect. This study might be used to heighten the awareness of administrators and to enable them to cultivate more positive working conditions. The study might facilitate local research and subsequent planning for faculty development at The University of British Columbia.

Your involvement, of course, is entirely voluntary, and you may withdraw from the study at any time. All responses will be kept strictly confidential. A dummy

number will be the only means of identification once the interview is completed.

Please complete and return the attached consent form by September 30th. I will be contacting you in the near future to arrange a suitable interview date.

Thank you very much for your time and interest.

Yours sincerely,

(Mrs.) Sharon Cochran

P.S. If you have any questions about the study, I would be happy to discuss them with you. Please feel free to contact me at

Divisions of Higher Education  
and Educational Administration  
University of British Columbia  
6298 Biological Sciences Road  
South Staff Office Block  
Room 11  
October 18, 1982

Dear \_\_\_\_\_,

In September, I sent a letter to you soliciting your help in my doctoral study. It is possible that the original letter and consent form was misdirected or mislaid. For this reason, I am enclosing a copy of the original letter (which provides important details about the study) and a new consent form.

Sincerely yours,

(Mrs.) Sharon Cochran

P.S. Please return the Consent Form by October 27th.

STUDY: THE FACILITATION AND HINDRANCE OF SCHOLARLY ACTIVITY  
AS REPORTED BY THE UNIVERSITY OF BRITISH COLUMBIA  
EDUCATION FACULTY MEMBERS

INVESTIGATOR: Sharon Cochran  
 CHAIRMAN: Dr. John Dennison  
 RESEARCH SUPERVISOR: Dr. Walter Boldt

The Associate Dean of Education is aware of the study and has no objection to it being conducted.

YOUR PARTICIPATION IS VOLUNTARY AND YOU HAVE THE RIGHT TO WITHDRAW AT ANY TIME FROM THE STUDY.

FROM \_\_\_\_\_ DATE \_\_\_\_\_

Please check the appropriate items.

—YES, I AM WILLING TO PARTICIPATE IN YOUR RESEARCH.

Rank: —Assistant —Associate —Full

Status: —Not Tenured —Tenured

Years from Retirement: —Less than 15 —Greater than 15

—NO, I AM UNWILLING TO PARTICIPATE IN YOUR RESEARCH.

ADDITIONAL COMMENTS \_\_\_\_\_

\_\_\_\_\_  
 \_\_\_\_\_

SIGNATURE \_\_\_\_\_

PLEASE FOLD AND STAPLE THIS FORM AND RETURN VIA UNIVERSITY MAIL BY SEPTEMBER 30th.

THANK YOU

APPENDIX B

DEANS' RECRUITMENT LETTERS

Department of Administrative,  
Adult and Higher Education  
University of British Columbia  
6298 Biological Sciences Road  
February 18, 1985

\*Name\*  
\*Position\*  
\*University/Address\*  
\*City\*, \*Province\*

Dear \*Name\*

I am writing to ask if you would assist me in my doctoral research.

The work is concerned with developing and exploring a scheme of factors, which describe from the perspective of members of a Faculty of Education, what facilitates and hinders their scholarly activity. A sample of faculty members were asked to report incidents in which their scholarly activities were significantly facilitated or hindered. Categorization of the incidents yielded twenty-three factors. I am now seeking the judgments of Deans as part of validation of the factors.

Instructions for the task, a description of the factors, two rating forms, and a stamped addressed envelope are enclosed. I estimate that the task will require twenty minutes of your time.

Your response will be kept anonymous and I shall be pleased to send you an abstract of the results of the study in due course if you would like to see it.

Many thanks for your cooperation.

Yours sincerely,

(Mrs.) Sharon Cochran

Department of Administrative,  
Adult and Higher Education  
University of British Columbia  
6298 Biological Sciences Road  
March 13, 1985

\*Name\*  
\*Position\*  
\*University/Address\*  
\*City\*, \*Province\*

Dear \*Name\*

In February, I sent a letter to you soliciting your help in my doctoral research. It is possible that the original letter and questionnaire package (including instructions for the task, a description sheet, two rating forms and a stamped addressed envelope) were misdirected or mislaid. For this reason, I am enclosing a copy of the original letter and questionnaire package.

Yours sincerely,

(Mrs.) Sharon Cochran

P.S. Please return both Rating Forms by March 27th in the stamped addressed envelope provided.

## APPENDIX C

## RATING FORMS

INSTRUCTIONS FOR RATING FORM IINSTRUCTIONS

Based on your experiences as Dean of a Faculty of Education and as a faculty member, you are being asked to make judgments about the twenty-three factors which have been identified as facilitating and hindering scholarly activity. Specifically, you are to indicate on Rating Form I, whether you agree, disagree, or are undecided that the presence of each factor facilitates the conduct of some form of scholarly activity.

PLEASE RETURN THIS RATING FORM AND RATING FORM II BY MARCH 11TH TO THE RESEARCHER IN THE STAMPED ADDRESSED ENVELOPE.

RATING FORM I

Indicate by a CHECKMARK, whether you AGREE, DISAGREE, or are UNDECIDED that the PRESENCE OF EACH FACTOR BELOW FACILITATES THE CONDUCT OF SOME FORM OF SCHOLARLY ACTIVITY. (Do you —Agree, —Disagree, or are —Undecided that "Research Assistance" facilitates the conduct of some form of scholarly activity?)

Reading or Studying	AGREE—	DISAGREE—	UNDECIDED—
Prior Scholarly Activities	AGREE—	DISAGREE—	UNDECIDED—
Participation in Practical Activities	AGREE—	DISAGREE—	UNDECIDED—
Discussion	AGREE—	DISAGREE—	UNDECIDED—
Advice	AGREE—	DISAGREE—	UNDECIDED—
Funds	AGREE—	DISAGREE—	UNDECIDED—
Time	AGREE—	DISAGREE—	UNDECIDED—
Access to Data	AGREE—	DISAGREE—	UNDECIDED—
Information	AGREE—	DISAGREE—	UNDECIDED—
Reference Materials	AGREE—	DISAGREE—	UNDECIDED—
Space & Non-computer Equipment	AGREE—	DISAGREE—	UNDECIDED—
Computer Services	AGREE—	DISAGREE—	UNDECIDED—
Typing, Xeroxing, & Mailing	AGREE—	DISAGREE—	UNDECIDED—
Research Assistance	AGREE—	DISAGREE—	UNDECIDED—
Critical Evaluation & Commentary	AGREE—	DISAGREE—	UNDECIDED—
Other Forms of Practical Assistance	AGREE—	DISAGREE—	UNDECIDED—
Skills	AGREE—	DISAGREE—	UNDECIDED—
Uncomplicated Bureaucratic Procedures	AGREE—	DISAGREE—	UNDECIDED—
Opportunities	AGREE—	DISAGREE—	UNDECIDED—
Recognition & Appreciation	AGREE—	DISAGREE—	UNDECIDED—

Expectations	AGREE—	DISAGREE—	UNDECIDED—
Tangible Benefits	AGREE—	DISAGREE—	UNDECIDED—
Collaboration	AGREE—	DISAGREE—	UNDECIDED—

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INSTRUCTIONS FOR RATING FORM IIINSTRUCTIONS

Based on your experiences as Dean of a Faculty of Education and as a faculty member, you are being asked to make judgments about the twenty-three factors which have been identified as facilitating and hindering scholarly activity. Specifically, you are to indicate on Rating Form II, whether you agree, disagree, or are undecided that the absence of each factor hinders the conduct of some form of scholarly activity.

PLEASE RETURN THIS RATING FORM AND RATING FORM I BY MARCH 11TH TO THE RESEARCHER IN THE STAMPED ADDRESSED ENVELOPE.

### RATING FORM II

Indicate by a CHECKMARK, whether you AGREE, DISAGREE, or are UNDECIDED that the ABSENCE OF EACH FACTOR BELOW HINDERS THE CONDUCT OF SOME FORM OF SCHOLARLY ACTIVITY. (Do you —Agree, —Disagree, or are —Undecided that absence of "Advice" hinders the conduct of some form of scholarly activity?)

Reading or Studying	AGREE—	DISAGREE—	UNDECIDED—
Prior Scholarly Activities	AGREE—	DISAGREE—	UNDECIDED—
Participation in Practical Activities	AGREE—	DISAGREE—	UNDECIDED—
Discussion	AGREE—	DISAGREE—	UNDECIDED—
Advice	AGREE—	DISAGREE—	UNDECIDED—
Funds	AGREE—	DISAGREE—	UNDECIDED—
Time	AGREE—	DISAGREE—	UNDECIDED—
Access to Data	AGREE—	DISAGREE—	UNDECIDED—
Information	AGREE—	DISAGREE—	UNDECIDED—
Reference Materials	AGREE—	DISAGREE—	UNDECIDED—
Space & Non-computer Equipment	AGREE—	DISAGREE—	UNDECIDED—
Computer Services	AGREE—	DISAGREE—	UNDECIDED—
Typing, Xeroxing, & Mailing	AGREE—	DISAGREE—	UNDECIDED—
Research Assistance	AGREE—	DISAGREE—	UNDECIDED—
Critical Evaluation & Commentary	AGREE—	DISAGREE—	UNDECIDED—
Other Forms of Practical Assistance	AGREE—	DISAGREE—	UNDECIDED—
Skills	AGREE—	DISAGREE—	UNDECIDED—
Uncomplicated Bureaucratic Procedures	AGREE—	DISAGREE—	UNDECIDED—
Opportunities	AGREE—	DISAGREE—	UNDECIDED—
Recognition & Appreciation	AGREE—	DISAGREE—	UNDECIDED—

Expectations	AGREE— DISAGREE— UNDECIDED—
Tangible Benefits	AGREE— DISAGREE— UNDECIDED—
Collaboration	AGREE— DISAGREE— UNDECIDED—

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FURTHER INFORMATION /COMMENTS /SUGGESTIONS: