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MODES OF CONTINUING PROFESSIONAL EDUCATION: A TEST OF HOULE'S TYPOLOGY WITH BUSINESS EDUCATION INSTRUCTORS

by

NINA M. POWLETTE

A THESIS

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The undersigned certify that they have read, and recommend to the Faculty of Graduate Studies and Research, for acceptance, a thesis entitled MODES OF CONTINUING PROFESSIONAL EDUCATION: A TEST OF HOULE'S TYPOLOGY WITH BUSINESS EDUCATION INSTRUCTORS submitted by NINA M. POWLETTE in partial fulfilment of the requirements for the degree of MASTER OF EDUCATION.

.....Darius R. Young.....

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.....A K Deaney.....

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Date 29 June 1988

This thesis is dedicated to the memory of my mother

Winifred Sophia Powlette

ABSTRACT

This study investigated Houle's typology and whether or not it was descriptive of the continuing professional education of Business Education Instructors. Houle has hypothesized a typology in which he identified three major modes of continuing professional education: Inquiry, Instruction and Reinforcement. However, Houle's typology was only tested with two professional needs of business education instructors based on Houle's typology was never investigated.

The first stage of this investigation involved the development of an activity item instrument, the Business Education Instructors' Activity Survey. This instrument was then used in the second stage of the study to test Houle's typology.

The participants of the study included 92 (N=92) Business Education Instructors in the Province of Alberta from both urban and rurual areas. There were 10.9 percent males and 89.1 percent females.

Data were anlyzed using factor analysis, one-way analysis of variance, and correlational methods. The data revealed that Houle's typology in a useful basis for categorizing the continuing professional needs of business education instructors. Thus Houle's theory is supported. However, contrary to Houle's three factor solution (Inquiry, Instruction and Reinforcement) data of this study revealed a four factor solution representing four modes of learning, Instruction, Inquiry, Reinforcement, and a new factor designated as Inquiry/Reinforcement. Thus the two significant findings of this study include the confirmation of Houle's theory as well as the discovery of a new mode of learning (inquiry/reinforcement) in the continuing professional education of business education instructors.

Significant relationships were found between business education instructors in small communities and the learning mode of instruction. This was true also between instructors graduating from the vocational program. Business education instructors differed across communities in the learning mode of inquiry/reinforcement.

The results of this study would indicate refinements to Houle's typology. Implications for further research were put forward on the basis of the findings.

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Chapter I

BACKGROUND AND PROBLEM STATEMENT

A. Introduction

Continuing Professional Education (CPE) is an emerging area of special interest within the field of adult education. However, one of the most critical continuing professional issues is the lack of systematic understanding of the ways in which professionals continue to learn. It is generally assumed that formal instruction is the most effective way to teach professionals. Yet, when professionals are asked about the ways in which they continue to learn best, the least effective strategy seems to be formal instruction. There is need, therefore, for empirical studies designed to investigate the most popular and effective means by which continuing professional educators enhance their professional competencies.

The way professionals learn can be approached at three levels. The first deals with questions about how professionals solve problems in practice and incorporate this new knowledge into their cognitive structures. There has been an enourmous amount of research and theorizing in this level undertaken mainly by psychologists. For example, Researchers Elstein, Shulman and Sprafka (1978) and Schon (1983), claimed that subjects trained to use experimental heuristics were more accurate than those trained to use their idiosyncratic heuristics. The second level involves questions on the best ways of organizing the circumstances of specific learning events, such as learning styles, self-directed learning, and program planning (Pennington, Allan, and Green, 1984; Sork, 1983). Many of the theories and research related to adult education have been focussed at this second level. The third level involves research on questions about the structural forms of professionals' educative activities of which Houle (1980) has been the chief proponent. Examples of these are activity oriented and goal oriented.

Generally, the third level has not received as much research attention as the other two levels. Hence, while some theoretical work has been done in this area in the general adult education literature (Houle, 1984, Litchfield, 1965) and in CPE (Houle; 1980, Houle 1983)

much of the research on these questions has been atheoretical, with many studies tending to describe the educative activities used by a variety of professional groups such as teachers (Arends, 1983), physicians (Barham and Benseman, 1984; Manning, 1983), and dieticians (Holli, 1982). All of these studies, however, are generally characterized by the absence of a theoretical framework within which to describe and analyze these activities.

Houle's (1980) contribution to the development of a theoretical framework in this area has been significant. He proposed a typology for describing the structural forms of continuing learning activities for professionals. In his typology he hypothesized three "major and overlapping modes" of learning which he labelled inquiry, instruction and performance. In his refinement of the typology he later renamed the mode of performance the mode of reinforcement (Houle, 1984). While Houle's proposal is attractive and may form the basis for a better understanding of how professionals engage in learning, it has not been adequately tested. Only three studies utilizing Houle's conceptual framework have been reported. Kovalik (1986) dealt with pastors, whereas Cervero and Dimmock (1985) and Cervero, Lebold and Dimmock (1983) studied nurses.

To develop an educational approach to CPE it seems natural to build on existing adult education foundations. However, this has not always been the case. In this context Groteleushen (1985) has cautioned that because of the unique nature of CPE, theories developed and research conducted on the general adult population regarding continuing education activites are limited in their contribution to understanding CPE. His rationale for such a caution included the homogeneity of the professional population, the almost mandatory nature of continuing professional education and the secondary beneficiaries of CPE as the three most distinguishing characteristics of CPE.

A recent review of the CPE research literature conducted by Cervero and Dimmock (1985) on how professionals learn, identified three areas which have been the focus of investigations. These included problem solving, the organizing of learning experiences and various patterns of learning. Whereas the first two areas, problem solving and the organizing of learning experiences have received considerable attention, research on patterns of learning

as theorized by Houle has been virtually neglected, hence the justification for this study.

B. Statement of the Problem

To what extent does Houle's framework provide an accurate conceptual description of systematic structural forms of continuing professional education for business education instructors?

C. Research Questions

Since the present investigation is an exploratory study of Houle's typology, the research questions are directly related to his proposed three major overlapping modes of learning. The questions that guided the study are:

1. Does Houle's major typology of inquiry, instruction, and reinforcement (performance) provide a useful framework for understanding the continuing professional education activities of business education instructors?
2. Are the professional education activities of business education instructors explained by other single or multiple-factor solutions that may suggest other modes of variations of learning not hypothesized by Houle?
3. What relationships exist between the modes of learning and demographic variables such as size of the business education institution, the size of community from which the sample is drawn, the chronological age, years of teaching experience, and qualification of the business education instructors.

D. Significance of the Study

A review of the research literature on business education instructors' continuing professional education has revealed that to date no research investigation has attempted to test Houle's theory about the modes of learning of business education instructors. Research involving this professional group has been virtually neglected. This neglect has generally been

acknowledged by Cervero et al (1983) and Cervero and Dimmock (1985) who recognized the importance of conducting research with various professional groups to test Houle's typology. In this context, Kovalik (1986) tested Houle's typology with pastors whereas Cervero et al (1983) and Cervero and Dimmock (1985) tested the typology with nurses.

It is in this context that this study, by testing Houle's typology adds to the existing body of knowledge in providing information on another professional group, thereby contributing to a better understanding of CPE as well as identifying avenues for future development. It is hoped that the present investigation may give renewed impetus to research involving the continuing professional education research of business educators. In the past little research has been conducted beyond repeated participation studies for formal, institutional-based programs. In summary, it is expected that this study will stimulate additional empirical investigations of business education instructors and so lead to a better understanding of CPE for the profession. In addition, it is also anticipated that the study will broaden the scope of awareness of administrators and lead to the consideration of the multi-faceted dimensions of business education instructors' CPE and to recognize which job-time CPE activities are contributing to the continuing professional education of their instructors.

Results of the study should be helpful to those involved in providing and developing CPE programs and materials for business education instructors. Business education instructors could utilize some of the findings of this study in the development of a different perspective for professional education.

E. Limitations

Because the study has focused on "on-the-job" continuing professional education of business education instructors, the result of the study are occupationally specific to that vocational group. Although comparisons may be made to other professional groups, generalization of the study findings to other professional groups is not appropriate.

Since the study was conducted using business education instructors in non university postsecondary institutions, the findings are particular to business education instructors within the non university sector. Therefore, generalization of findings beyond this group is not possible.

F. Definition of Terms

The following definition of terms are used in this study:

Continuing professional education activities. This term refers to activities engaged in for educational purposes in order to accumulate content, develop skills, or acquire sensitivity relative to one's profession.

Business education instructors' job-time activities is defined as the functions performed by instructors as a normal part of their job responsibilities. Bevis (1971) describes it as "time spent on the assigned nursing unit," and as "any time outside the normal working day for which the staff nurse is compensated by the employer in time or money" (p. 42).

Whereas, Copeland's (1969) study of county extension agents and the Kovalik's (1986) study of pastors defined job-time activities as "all time that a person uses in making preparation for and performing job responsibilities." A comparison of the definitions of Bevis's job-time activities and Copeland and Kovalik's job-time activities showed that Bevis's definition was too narrow. In this study, however, business education instructors job-time activities adopts the definition of Copeland (1969) and Kovalik (1986) as being sufficiently precise and focussed on job time responsibilities.

Educative. An activity in which a business education instructor "participates for the primary purpose of increasing his/her knowledge, skill, or sensitivity" (Bevis, 1971).

Non-educative. An educational activity in which a business education instructor participates for the primary purpose of promoting the welfare of the students, the classroom, the other business instructors or the institution (Bevis, 1971).

Business education instructor. A graduate of the Vocational and Industrial program or Business Education program, or a recognized school where office technology/secretarial

subjects are taught. One who is responsible for teaching a group of courses (or curriculum) offered in post-secondary institutions to provide students with competency in business/secretarial subjects for job entry or for personal use.

G. Organization of the Study

This study can best be described as a descriptive survey with a substantial analytical component which examined relationships among significant factors associated with professionals' continuing education. The research literature relative to adult learning and the development of instruments by other researchers and business teacher education in Alberta are reviewed in Chapter 2. Procedures in developing an instrument specifically for this study are contained in Chapter 3, Data Analysis and Findings are contained in Chapter 4, followed by Conclusions and Recommendations in Chapter 5.

H. Summary

This chapter includes a background summary, a statement of the problem, as well as accompanying research questions. It also included a statement on the significance of the study as well as its limitations. Specific terms used in this study and the organization of the study were outlined. Chapter II presents a review of the related literature.

Chapter II

REVIEW OF RELATED LITERATURE

A. Introduction

This chapter contains a review of the pertinent literature and is organized under three headings:

a. Theory of the study which provides the conceptual framework for this study. Among the studies reviewed here are those of Houle (1980), Cervero & Dimmock (1983, 1984) and Kovalik (1986).

b. Concept and sequence for instrument development in participation survey research. Studies reviewed include those by Brown (1960), Sheffield (1962), Ingham (1963), Litchfield (1965), Copeland (1969) and Bevis (1971).

c. Business Education Instructors Continuing Education will be reviewed under two headings

(i) In-service

(ii) Professional Development.

B. Theory and Related Studies

Houle (1980), professor emeritus of education at the University of Chicago, started his pioneering work in identifying learning orientations in men and women who retain alert and inquiring minds throughout the years of their maturity. Houle sought to investigate the nature and activities of outstandingly active continuing learners from their own viewpoint and according to a broad conceptual definition of adult education not bound by the confines of any one particular institution or institutional form. He proposed that continuing learners and their educational activites might somehow "be fitted together into patterns that would throw light on the meaning of continuing education" (Houle, 1961, p. 14). In reporting this inquiry, which resulted in the fruitful concept of patterns of orientation toward learning

among continuing learners, Houle also suggested that patterns of total educational activity might be meaningfully identified if adequate instrumentation could be devised.

Despite the fact that Houle did not resume work again in that direction until 1980 when he developed and named his typology, he nevertheless, through that first pioneering work, provided much of the inspiration and initiative for further participation studies. Empirical studies based on Houle's conceptual framework suggested in The Inquiring Mind have been carried out by Brown (1960), Sheffield (1962) and Ingham (1963) as well as other researchers. These studies explored various facets of the orientation of adult continuing learners as well as their learning activities.

When Houle resumed his studies in 1980 he hypothesized that professionals have a distinct pattern of learning which can be described by a three-part typology, serving as the framework for this study. Houle depicts the three modes as "overlapping" and identified these three modes of learning as inquiry, instruction, and performance. The mode of performance was later renamed by Houle (1984) as the mode of reinforcement to avoid the ambiguity of using the word "performance" as a summation of what actually happens in professional practice.

Houle's typology, however, did not emerge as a result of direct empirical analysis; rather, it was developed from his breadth of practical experience and exposure to a wide range of involvement and interest in adult continuing education, and in continuing professional education (CPE) in particular. Thus, intuition and experience provided the basis for the broad general statements of his typology which was not empirically rooted. Boshier and Collins (1985) noted Houle's proclivity for trinitarian solutions by citing Houle's classification of goal orientation, learning orientation and activity orientation. Also, Houle's modes of learning typology provided an initial conceptual framework which could be used to understand the various ways continuing professional education is conducted.

The concept of the mode of inquiry as enunciated by Houle (1980) is the process of creating some "synthesis, idea, technique, policy or strategy of action." An example would be an instructor as a member of an Advisory Committee where decisions are made. The learning

outcomes of the process of this inquiry cannot be predicted in advance and may or may not have been intended by the learner. The works of two learning theorists, Dewey (1938) and Bruner (1961), support this theory of inquiry in that it is only after the occurrence of experience that success in learning is identified.

This mode of inquiry sometimes is used in a structured fashion, for example discussion and encounter groups, seminars, clinics and conferences, thereby facilitating the achievement of "new ideas or new ways of thinking." The active involvement of the learner in reflecting on the meaning of experiences is emphasized by

> efforts directed primarily at establishing policy, seeking consensus, working out compromises, and projecting plans .... The effectiveness of the inquiry mode is blighted by any tinge of didacticism which destroys the spontaneity of the discovery process (Houle, 1980, p. 32)

Another mode hypothesized by Houle is the mode of instruction which is the "process of disseminating established skills, knowledge, or sensitiveness." One of the salient feature of this mode is the development of learning goals and plans to achieve those goals by adopting specific strategies. Finally, evaluation is undertaken to determine whether or not goals are achieved. The criteria of success, according to Houle (1980), in the mode of instruction is whether or not planned goals have been achieved. According to Houle, this mode of instruction can be delivered through a person, a book or any other source. It is assumed by the learner that the information will be acquired from these sources. The classical setting for this mode is a classroom with an instructor, but can also include self-directed instruction as referenced by Knowles (1975) and Tough (1966).

The third mode hypothesized by Houle (1980) is the reinforcement mode which is a process of "internalizing an idea" so that it becomes a fundamental part in which a learner thinks about and undertakes personal work. This mode in pre-service professional education is characterized

> by practical or clinical teaching, where it is inculcated by drill, by close supervision, by clinical presentations and by long continued demonstration on the part of those who provide instruction (Houle, 1980, p.32)

An assessment of this mode of reinforcement is essentially, in terms of the perspicacity of actual performance, judged by "peers, by supervisors, by external examiners, and occasionally by the courts."

The following diagram designed by the researcher is but one of the many different approaches to contouring a diagram to conceptually visualize Houle's three hypothesized modes of inquiry, instruction and reinforcement:

The three modes, individual yet sharing common areas -- are not completely independent. This interdependence had implications as to how the research data were statistically analyzed. Also, as noted previously, Houle modified his terminology regarding the mode of performance, renaming it the mode of reinforcement in order to emphasize the unique individualized style of practice which emerges by continuous usage. Similarly, in order to be consistent with Houle's most recent statement as well as a recent study by Kovalik (1986), the term reinforcement will be used.

Houle claimed that the three major modes of learning may be "overlapping" in that, in some instances, two or more modes may be operating in the same learning situation and may not be distinguishable from each other. It is also possible that the "overlapping" may result in the creation of modes in addition to the three major ones. Diagram 1 identifies the major modes suggested by Houle and four additional combination modes identified by the researcher. They are as follows:

Houle's major modes:

1. Inquiry
2. Instruction
3. Reinforcement (Performance)

Inferred combination modes:

1. Inquiry/reinforcement
2. Inquiry/instruction
3. Instruction/reinforcement
4. Inquiry/instruction/reinforcement

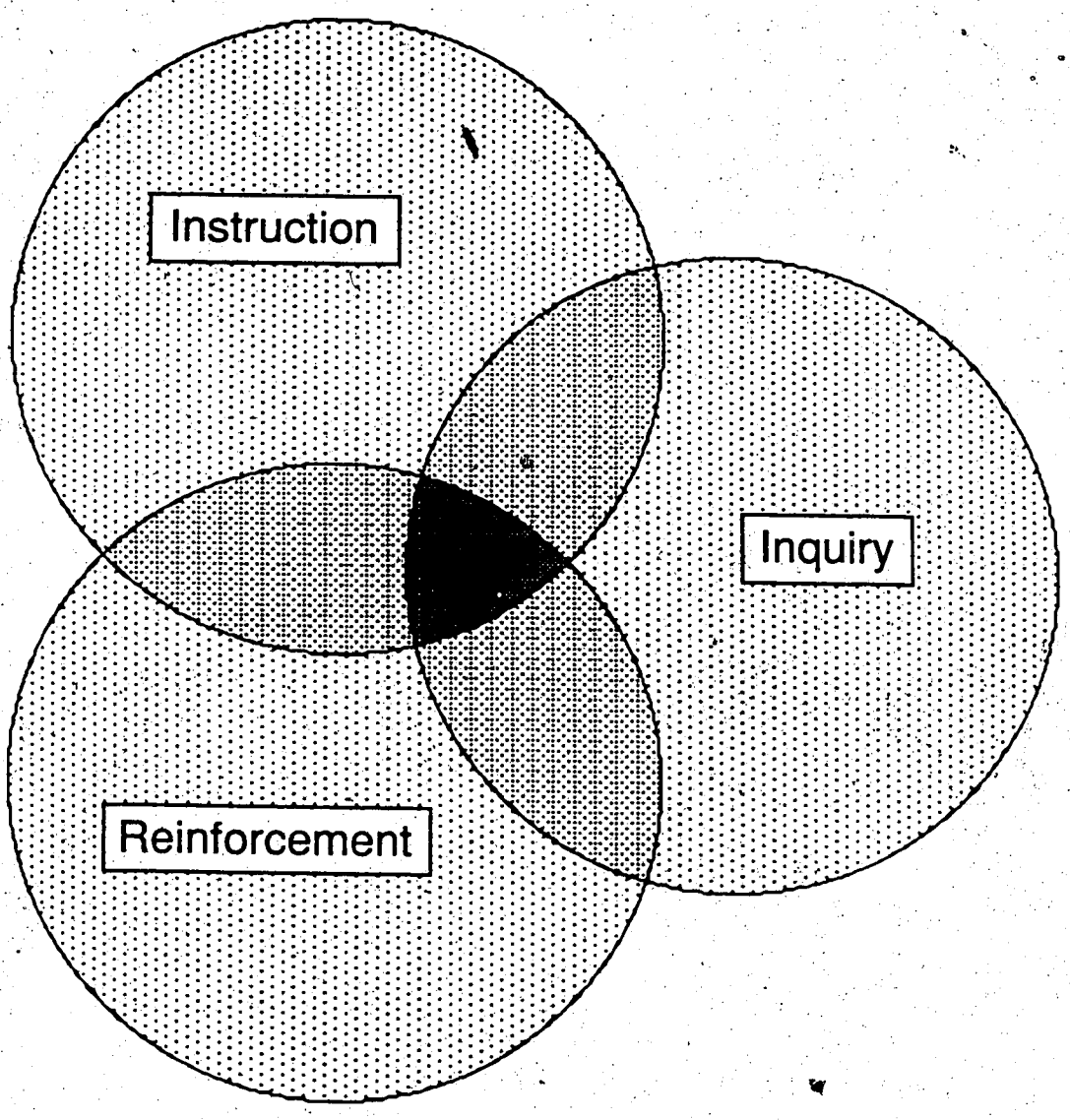


Diagram 1

Overlapping Modes of Learning

Houle's typology has provided a rationale to help understand each profession and the multiple standards and ideals for the continuing renewal of the profession. Continuing education research, therefore, is a process for addressing desirability of those ideas and for encouraging interdependence as well as strengthening the capabilities of practitioners to pursue those ideals.

Ronald M. Cervero, Associate Professor, Adult Education, University of Georgia and Katherine H. Dimmock, Associate Professor, Nursing, University of Indianapolis, conducted a study of nurses in 1983 and again in 1984. The purpose of the study was to test the adequacy of Houle's typology with a population of staff nurses in a community hospital

Investigations were based on an instrument developed by Bevis (1971), that was known to be a valid and reliable measurement of the continuing learning activities of nurses. The survey was administered to the same population of 350 nurses on two different occasions, one year apart. In the first study, 108 items (47 educative and 61 for masking) were used; in the second study the 61 masking items were dropped and the response to the shorter version was increased by 17 percent.

Data for each study were analyzed by oblique factor analysis and tested for three-, four-, five-, and six-factor solutions to determine which would best account for the variance. The researchers concluded that for both the 1983 and 1984 data, the four-factor solution was chosen because the five-factor solution "did not improve the theoretical interpretation of the data." The four factor solution was identified as inquiry, self instruction, group instruction and reinforcement. It was therefore concluded that the modes of self and group-instruction were refinements to Houle's mode of instruction. As can be seen from Diagram 1, it is possible to relate the four factors from Cervero and Dimmock (1987) to the major modes one, two, and three hypothesized by Houle. Their refinement relates specifically to mode two in which instruction can be subdivided into two separate modes or considered as sub modes of one major mode.

Kovalik (1986) conducted his studies with a sample of 509 pastors. The purpose of his study was to test Houle's typology with pastors. The data were collected through a 50

item instrument developed along the guidelines established by Bevis (1971). The response rate for Kovalik's study was 72.5 percent. Data were analyzed using the principal component extraction technique and an oblique rotation. Kovalik also tested for a three-, four-, five-, six- and seven-factor solution and finally selected a four-factor solution because it offered "the best interpretation of the data in the most parsimonious way." The four factors which represented his modes of learning were labelled self-inquiry, self-instruction, reinforcement, and inquiry/reinforcement. Kovalik concluded that his modes of self-inquiry and inquiry/reinforcement were refinements to Houle's mode of instruction.

It is possible to relate the four factors from Kovalik (1986) to major modes one, two, and three outlined in Diagram 1. Kovalik's refinements relate to mode one and three where it is observed that the mode of inquiry is self-initiated and where inquiry also functions as reinforcement.

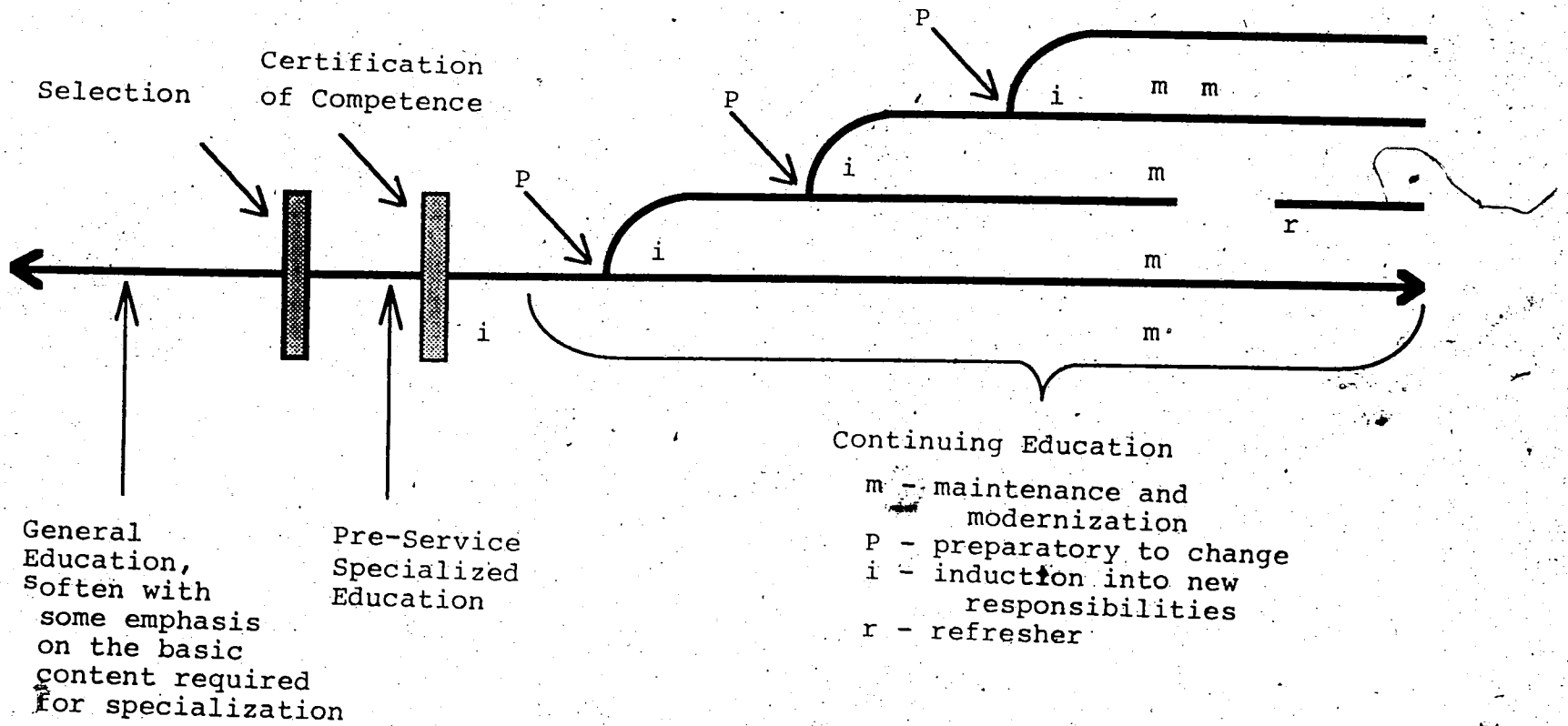
Relationships between selected demographic variables were also analyzed using correlation statistics and one-way analysis of variance. Kovalik reported that significant relationships were found between the four factors of age, years of service, size of church, size of community and denominational affiliation. This type of information if found by Cervero and Dimmock (1987) was not reported.

The results from Kovalik's study as well as the results from Cervero and Dimmock are, essentially, consistent with Houle's basic typology with the exception of the factors of modes of inquiry and reinforcement. For Cervero and Dimmock the mode of instruction was subdivided into two subgroups, instruction and self-instruction, thereby identifying the originator of the educative item. In Kovalik's study, the mode of Inquiry and Reinforcement was categorized purely as Inquiry, and Inquiry-Reinforcement as another subcategory.

Houle's typology and the refinement suggested by Cervero and Dimmock (1987) and Kovalik (1986) provide the basis for exploring the CPE of other professional groups. Their formulation and research results are consistent with a dynamic view of CPE as proposed by Houle (1980). Diagram 2 is a dynamic model of continuing professional education. This diagram is in contrast to a traditional, stable model of CPE in which CPE is considered to be

Diagram 2

Dynamic Model of Continuing Education



a series of learning experiences extending a professional career in a linear path.

C. Patterns of Instrument Development in Participation Surveys

Introduction

Various patterns of instrument construction used to measure educational activities generally and job-time activities in particular are reviewed in this section.

Brown (1960) in his study of college alumni attempted a type of survey instrument designed to measure a selected group of nine activities which he assumed to be "an adequate reflection of college alumni educational life" (p. 90). He concluded that there had been some unavoidable imprecision in the measurement of adult education experience and recommended "a more extensive study that utilized somewhat diferent methods of measuring and evaluating educational experience" (pp. 139-40). Some of the imprecision referred to by Brown dealt with his attempt to determine the quality of the educational experience. This complex dimension of participation, according to Brown, should be measured separately from the nature and extent of educational participation.

Sheffield (1962) conducted his study on the orientation patterns of adult learners participating in continuing learning activities. His study showed that older adult learners were more likely to be personal goal oriented first, followed by desire activity, then need activity orientation. In contrast, young adults in their twenties and early thirties tended to be need-activity oriented first.

Sheffield developed his continuing learning activities survey instrument using a five point Likert scale where respondents indicated their participation in activities during the previous and current year. A list of 120 items which after refinement was reduced to 99 (of which 23 were considered formal and informal learning activities engaged in by groups or individuals) was used. The small number of items on Sheffield's list can be attributed to the fact that he was examining learning orientations. Most of the activities there would be classified as leisure time pursuits with only a few having CPF relationships. Sheffield used

the data to measure the extent of continuing learning by totalling the two yearly responses to the instrument in order to derive at a total score for each. Based on his findings, he suggested two scoring refinements: the elimination of assigning value to responses which involved no participation, and the elimination or clarification of the measurement of participation over periods greater than one year.

Ingham (1963) in his study of college alumni developed an instrument to measure educative behaviour and its relationship to leisure satisfaction. His instrument consisted of 125 leisure time activities, 48 of which were being judged to involve "educative behaviour." Only the 48 items which were educative were scored. .The other items were used to mask the instrument so as to eliminate bias. Ingham's instrument required respondents to make a judgement of the extent of their participation in activities; the judgement categories were "frequently," "occasionally," and "not at all."

Despite the fact that both Ingham and Sheffield used differing techniques of measurement, the distribution of scores in the two studies was remarkably similar. These early researchers investigated the participation and learning orientations of the general population and not professional groups in particular. Therefore, the type of learning activities they included in their measurement instruments were necessarily broad and general.

In reviewing previous studies, Litchfield (1965) acknowledged that a gap existed in the knowledge of the educational participation of adults. A great deal of information was available about single educational activities of individuals and about particular programs of adult education and the participation and nonparticipation in those programs; however, surprisingly, not many investigators dealt with the full picture of individual educational efforts. She felt that a comprehensive look at the various activities in which participants take part over a period of time was reasonable and necessary. Litchfield attributes the lack of a broad systematic research approach in adult education research to two possible reasons; a narrow conceptualization of adult education as well as a lack of appropriate research methods and the use of analytical instruments. The first task in the construction of the Leisure Activity Survey (LAS) was to build a comprehensive list of activities in which adults were

likely to take part during their leisure time. In the list she incorporated a wide range of recreative and social items. The initial list consisted of 225 activities which was later refined to 99 items, of which 46 were judged educative. Leisure time or spare time was defined "as all time free from work, sleep, or household tasks."

In developing her instrument, Litchfield (1965) recognized the value of the studies by Brown (1960), Sheffield (1962) and Ingham (1963) in their tendency to view the study of participation from the perspective of the individual learner rather than an institutional or program perspective. Each collected data in general about adult learners. Their instruments, according to Litchfield, focused upon the individual participant and used the techniques of "self-reporting" of social performance of various activities to be undertaken for purposes of education.

Litchfield (1965), in developing her measurement, had four main objectives which were to:

1. develop a technique that improved upon existing measures and procedures of determining the extent of adult participation in educational activities;
2. apply the technique to determine the nature of the underlying structure among the educational activities of adults;
3. apply the technique to determine the characteristics of differential patterns of educational participation among adult education participants; and
4. examine the relationship of selected demographic characteristics of adults to differential patterns of participation in educational activities (p. 12).

The first mention of the term "job-time" was by Copeland (1969) when he conducted his study on continuing educational activities of extension agents. Prior to Copeland's study, voluntary continuing education by adults was considered leisure-time activity.

Copeland designed his study to explore the impact of organization on the extent of continuing education activity. He considered educational participation to be synonymous with continuing learning activity. He defined the concept of educational participation as the activities undertaken by individuals to improve their knowledge, skills and sensitivities. These

activities might be partially or completely under the direction of the individual, or they might be provided by another individual or by institutions.

Realizing that the adult professional was involved in a variety of educational activities both at work and during leisure, Copeland felt it appropriate to analyze educational participation during two periods of time: (a) the time that is spent on the job, and (b) time that is free from work, sleep, or household tasks. Time spent on the job, also referred to as "job-time", was defined by him as "all that time used in preparing for and performing responsibilities."

An instrument to measure job-time participation in continuing learning activities by staff nurses was developed by Bevis (1971). Bevis's instrument closely followed the design pattern of Copeland's although it was used with a different occupational group. It should be noted that Bevis's instrument was developed nine years before Houle's typology of the three modes of learning. In Bevis's 108 item paper and pencil instrument, respondents were asked to indicate the frequency that they engaged in a particular activity during the previous year. Of the 108 items 47 were educative and 61 were used to mask the instrument.

In developing the instrument Bevis (1977) formulated ten practical guidelines for construction of the instrument as follows:

1. The instrument would be masked to reduce both positive and negative bias The instrument was titled "Job Activity Survey" to enhance masking.
2. Two types of activities would be constructed: (a) educational activities for determination of extent of educational participation; and (b) noneducational activities for masking purposes. An educational activity was defined as an activity in which a staff nurse participates for the primary purpose of increasing her knowledge, skill, or sensitivity. A non-educational activity or job-activity was defined as an activity in which a staff nurse participates for the primary purpose of promoting the welfare of the patient, the nursing unit, the unit's personnel, or the hospital.
3. Two areas of "job-time" examined: (a) time spent on the assigned nursing unit and (b) time spent outside the normal working day for which the staff nurse is compensated by

the employer.

4. Activities should have breadth and comprehensiveness.
5. Selection of job activities would not be based on a definition of nursing. Emphasis would be placed on job activities that are engaged in, not with job activities that should be engaged in by staff nurses.
6. Degree of learning and quality of educational experience would not be considered.
7. The instrument would be designed for self administration.
8. The activities would be classified by judges as either educational or noneducational.
9. The instrument would be designed to be scored either by machine or hand.
10. The terminology would be easily understood by all staff nurses. (pp. 24-26).

Bevis (1971) went through a process of validating the instrument and noted that the instrument held potential promise for evaluating the quality of on-the-job learning experiences. This instrument which holds the promise for further development purports to measure what no other instrument had so far measured and seems to have practical value and potential.

Finally, another researcher, Gunzburger (1980), also used the Learning Activity Survey (LAS) as the conceptual guide for a study of the continuing professional education of medical students. As part of her investigation, Gunzburger modified the Leisure Activity Survey slightly and developed an Activity Survey to measure the continuing medical education. Gunzburger's study contributed to the available knowledge of continuing professional education in reaffirming the connection between continuing professional education and general continuing education as a 'lifestyle' of an individual. The study confirmed that both such aspects can be measured and that the Learning Activity Survey is a reliable instrument and represents a reliable pattern for future studies of other occupational groups.

D. Business Education Instructors' Continuing Professional Education

Introduction

In a day when knowledge accelerates at an exponential rather than a linear rate and rapid advances in technology occur, business education instructors now more so than ever need to keep abreast of the latest developments in their field through continuing education. In the pioneering days continuing professional education was difficult because of the acute shortage of teachers. In this section literature related to business education instructors' continuing education is reviewed under two headings, in-service and professional development (PD).

E. In-service

In-service education in North America developed along lines somewhat similar to those followed in the evolution of preparatory programs for other professions. McGlothlin (1964) speaking of professional education generally states that:

> Education for the professions was initially an extension of professional practice. It was largely concerned with passing on the tricks of the trade, the mechanics of practice, the skills of particular procedures. On its entrance into the university, the professional school chose a broader curriculum.

Brubacher, in discussing the development of professional education in the United States, says that, "At first professional education took almost exclusively the form of apprenticeship" (p. 16). Business teacher education also had its beginnings in this type of on-the-job training.

Charles Russell wrote in 1922 that the improvement of the teacher in-service represents the oldest, and at the same time, one of the most recent developments in the field of education. In the early days of public education in North America, the teacher had little, if any, pre-service preparation for work in the classroom. The development of teaching competence had perforce to be in-service. Improved effectiveness occurred either through an informal sort of apprenticeship or through the individual's own trials and errors. The first

formal attempt to improve the quality of instruction through in-service coincided with the development of specific institutions for the pre-service education of instructors.

The development during the 1930's of in-service innovations such as the workshop, indicates further the trend in the development of in-service education. In-service activities were no longer designed solely to fill gaps in pre-service preparatory programs, but they had begun to be used as a means of meeting the needs of particular individuals.

Conant (1963) suggests that the responsibility for the continuation of the teacher's education rests on the teacher herself. He declared that the well-educated man or woman of the future must be primarily a self-educated person. By self education, Conant meant extensive reading which is based upon a deep desire to learn. Other authorities in the field indicate that a share of the responsibility for the provision of in-service educational opportunities at least should be placed on those who administer and supervise the educational enterprise, and on the organized teaching profession.

Guerrieri (1980) writing about business teachers and continuing education in the United States stated that there was a continuing need for business education teachers not only to improve upon, but also to be aware of those entry-level skills and knowledge that students must bring to the job. There was also the need for business educators to acquire professional knowledge to meet and to accommodate the needs of the handicapped.

Business education teachers should, according to Guerrieri, update old skills and obtain new knowledge through formal course work, visitation to other institutions, membership and participation in the professional organizations, convention attendance, professional publications, reading, and participation in workshops. Another author, Farnsworth (1981), added two methods of providing professional updating and these were through (a) classroom demonstrations and (b) professional presentations. Tunick and Holcomb (1980) also recommended short-term training programs and stated that, teachers needed to set goals and to review them periodically. Blue (1967) also recommended changes in media, materials, curricula, and conceptions of the role of the teacher.

> Teacher educators have a continuing responsibility in helping prospective and experienced teachers develop appropriate concepts of individualized instruction as well as methods by which individualization can be achieved. (Business Education Forum 1974, p. 10)

Solomon and Ochsner (1978) noted that teachers lacked interest in continuing their education. They found that expectations from prospective teachers were not as great as in the past. In surveying life goals of educators, it was found that being an authority in the field was considered essential or very important in 1970 (58 percent), but dropped to 43 percent in 1977.

Business education instructors have always been encouraged to continue education through in-service programs. In 1955 in the United States, a study was conducted by McConnel in which concern was expressed with professional field services provided by a group of colleges and universities. Among his recommendations were that all in-service teachers should be able to find enrichment, encouragement, and motivation through the professional field services program. In-service teachers should be assisted by the professional field services program to prepare for the solution of professional problems in the future. However, in-service programs have not always been effective. A study in Ohio in 1972 for the Commission on Public School Personnel Policies (Report No. 6) revealed that 68 percent of the teachers responding to a survey indicated that present in-service programs were inadequate for professional growth. The majority of teachers felt they were not adequately involved in planning in-service training. Davis and Armistead (1975) and Valsame (1977) agreed that in-service and staff development programs were not meeting the needs of teachers. In their evaluation of continuing education, Joyce, Howey, and Yarger (1976) found in-service programs were weak and relative failures.

In 1980 Edelfelt reviewed the first six years of expectations he made in 1974 with respect to in-service. It was found that there had been much greater interest and much more activity in in-service education from 1975 to 1980 than from 1968 to 1974. But the greatest fear was that in-service education was becoming merely the "in" thing rather than a genuine effort to improve school programs. Edelfelt found that high quality in-service programs were far from widespread. Also, many more people were writing about what was happening in

in-service education than what ought to happen. Telling the whole story, however, was still a rare occurrence. Very little in literature concerning in-service education was authored by teachers. In evaluating continuing education, Edelfelt discovered that more conferences, workshops, etc. were serving as places to examine, to show, to challenge, and to plan ideas for in-service education. He stated that there was still no significant research and evaluation going on in connection with in-service programs, and what was done was meager and partial. According to Edelfelt, in-service was more often about education and teaching than of teaching.

Glassberg and Oja (1981) conducted a research project that involved a six-week summer workshop and weekly supervision seminars. The contents included educational psychology, development of interpersonal communication skills, development of supervision skills and development of strategies to enable teachers to assume a variety of teaching roles. They found that it was difficult to create effective developmental experiences for adults. Adults tended to avoid significant change. It was also found that teachers exposed to new ideas through lectures, skill development workshops, or courses were not receptive and that the educators' efforts were ineffective. It was their contention that theory must be relevant to practice regarding in-service programs. Hutson (1981) recommended ways to improve in-service programs and suggested that the design of in-service programs should be complex and ambitious, and not trivial and routine. Further, in-service programs should be planned to respond to assessed needs, trainers should be competent, and the in-service content should be directed towards changing teaching, not student behavior.

In the British study Teacher Education and Training - A Report by a Committee of Enquiry Appointed by the Secretary of State for Education and Science (1972) under the chairmanship of Lord James of Rusholme, more commonly known as the James Report, it was stated that,

> It is self-evident that pre-service education and training, together with the probationary year, can be no more than a foundation. In that initial period it is impossible to foresee, let alone to provide for, all the demands that may fall on the teaching profession in future, or on individual members of it during their careers

(1972, p. 6).

The James Report included all in-service training and education in what it referred to as the third cycle of teacher education. The Report observed:

> ... in any case, it is well to concentrate first on the needs and aspirations of the teachers now working in the schools and colleges, who for too long have suffered from inadequate opportunities to improve their knowledge and professional skill. Most important of all, it is in the third cycle that the education and training of teachers can be, and should be, at its best. It is here that both the quality of our education and the standards of the profession can be most speedily, powerfully and economically improved (p. 8).

However, ten years after the James Report there is considerable evidence to indicate that the general response of teachers toward past and current efforts in continuing teacher education is one of disdain or outright hostility. Few, if any, research studies place current efforts in continuing teacher education in a favourable light (Joyce, 1980).

In Canada, teacher education began with on the job training, similar to the United States, and then moved into specialized vocational schools which have at various times been called Normal Schools, Model Schools, and Teachers' Colleges. Today pre-service education is generally accepted as a task for the universities. Phillips (1957), a historian on Canadian education, said about the development of in-service education in Canada that "the licensing of teachers with very low qualifications had one good effect: "It established a custom of in-service development."

Phillips, writing about the institutions that were the primary means of continuing education of the teacher in-service, describes the institution as being administered rather autocratically. Meetings were arranged by government officials which lasted for a period of two to five days and teachers were required to listen to lectures by visiting lecturers.

However, as the trend toward the professionalization of teachers developed new approaches evolved. It was found that voluntary activities resulted in more professional growth over the long run. For example, changes in the curriculum in Alberta in 1911 resulted in a request for summer-school sessions. As the belief that teachers should be educated and trained grew, new ways to achieve this condition were devised. The Province of Ontario

began to build up teachers' libraries and to encourage teachers to read more. Extra-mural work for credit was also approved by the universities. Further, the publishing of professional journals was another step in the developing of in-service education in Canada.

Alberta's acute shortage for teachers in the pioneering days was minimized by its policy of importing teachers from other provinces as well as other countries. The circumstances, however, slowly changed when summer schools for teachers in Edmonton, Alberta, enrolled 75 students in 1913, increasing the enrollment to 310 in 1915. Indications were that the summer school was meeting a real need of instruction in agriculture and gardening, nature study, high school science, household arts, arts and mechanical drawings, manual arts, physical training, and first aid and home nursing. Bookkeeping and business subjects were first offered in 1937 (University of Alberta Report 1916, p. 5).

As early as 1920 the Department of Education wanted the University of Alberta to give consideration to students who had completed the business education courses in high schools and wanted to obtain the degree of Bachelor of Commerce before receiving teacher certification. Although the private business colleges were never part of the teacher training program, students who took courses in the private business colleges later became commercial teachers. Many graduates of the University of Alberta with a Bachelor of Commerce degree were hired as commercial teachers. Until 1936, there were no business teacher training courses or designated certification of commercial teachers in Alberta. However, this was remedied when in 1937 the Department of Education provided summer courses in specialized business subjects.

In 1940, the Department of Education Summer Schools offered students qualifying tests in bookkeeping, stenography, economics, commercial arithmetic, commercial law and typewriting. In 1945 the University of Calgary was established when the Faculty of Education took over the Calgary Normal School.

Beere (1962), in his survey of Canadian practices in business teacher education noted that the Faculty of Education at the University of Alberta was instituted in 1944 and supplemented the Normal schools and the Department of Education Summer schools. A few

years later the University of Alberta developed a formula for offering some courses in business education skills, credit for which could be applied toward the Bachelor of Education degree. In 1958, new regulations concerning certification in Business Education replaced the old system of a Commercial certificate with teachers having to use the Faculty of Education courses to gain certification. Among the many recommendations made by Beere were one of the continuance of the type of skill training courses for business education teachers which had been offered at the University since 1954; provision of more general business background courses in the University's business teachers education program and provision of occupational business experience for business education teachers.

Florentine (1967) did a survey of business education in North America and visited several Canadian and American teacher education colleges. Florendine felt that the time had come to

> ... examine critically our present program and ...[to] find means to continually update the classroom teacher through publications, seminars and in-service programs on a province-wide basis (p. 58)

It was stated that experience in business should be a prerequisite for certification for all teachers entering a vocational area and that extension of this could lead to some form of in-service training for business teachers in industry as a requirement for limited interim certificates. One of the recommendations was for the retraining of business teachers either through work experience or university workshops on a minimum five-year sequence.

Bujea (1973) studied the development of business teacher education in Canada during the period 1900-1970 and made many observations and recommendations. It was noted that formal business teacher education slowly expanded to become part of the University of Alberta program to the extent that by 1958 only 30 percent of teachers in Alberta held a degree or were in the process of completing a degree. However, ten years later (by 1968), students were able to enter a Master's program in business education and could continue on to a doctoral program through an individualized study program.

In the early 1960's as a result of the signing of the Technical and Vocational Training Assistance Act (TVTA) by both the Federal and Provincial governments, the Faculty of Education at the University of Alberta established a new department called the Department of Industrial and Vocational Education. Students who had a journeyman's certificate and seven years' experience in industry were the primary focus of this new department recruitment for teacher training. Among the many recommendations made by Bujea were the continuance of the type of skill training courses for business education teachers; provision of more general business background in the University's teacher education program and provision of occupational business experience for business education teachers. Bujea also recommended a work-experience program, as a component of business teacher education since experience combined with professional training would make the business teacher more conversant with the needs of business and such a teacher will be more prepared to provide students with transfer of learning. Bujea also felt that work experience received prior to the business teacher program was also desirable.

Kashuba and Rypien (1975) in their study of business education in the Province of Alberta also made recommendations relative to the continuing education of business education teachers. Among their recommendations are in-service or re-training of part-time and full-time business education teachers; as well as workshops and working sabbaticals for business teachers to become acquainted with current practices and procedures in business.

In 1944 the Faculty of Education at the University of Alberta was instituted and supplemented the Normal Schools and the Department of Education Summer Schools. At that time it was the only institution of higher learning which provided business teacher education. When the University of Alberta assumed the responsibility for the education of business teachers, the Department of Education relinquished its role in this area, except in an advisory capacity, but continued to certify the teachers of the Province of Alberta.

In 1945, the University of Calgary was established in Alberta and the Faculty of Education took over the Calgary Normal school. Early in the 1960s, a business education subject area was established in the Faculty of Education at the University of Alberta. The

establishment of this subject area was due to concerns voiced by business leaders in Edmonton that no teacher training was provided in business education.

In 1964-1965 University of Alberta School year, a course in Curriculum and Instruction in Business Education was offered. This course was described as "... reading and discussion of research, curriculum and teaching procedures in one of the major fields of the secondary school" (University of Alberta 1964, p. 74-75).

In 1984 a study commissioned by the Department of Education entitled "The Education of Teachers in Alberta: a Model for the Future," suggested among many recommendations, that all teachers in Alberta undergo evaluation of their teaching effectiveness and professional development every five years; and that renewal of a teaching certificate be dependent upon the teacher's acquisition of a specified number of credit points for professional development by the time of each evaluation.

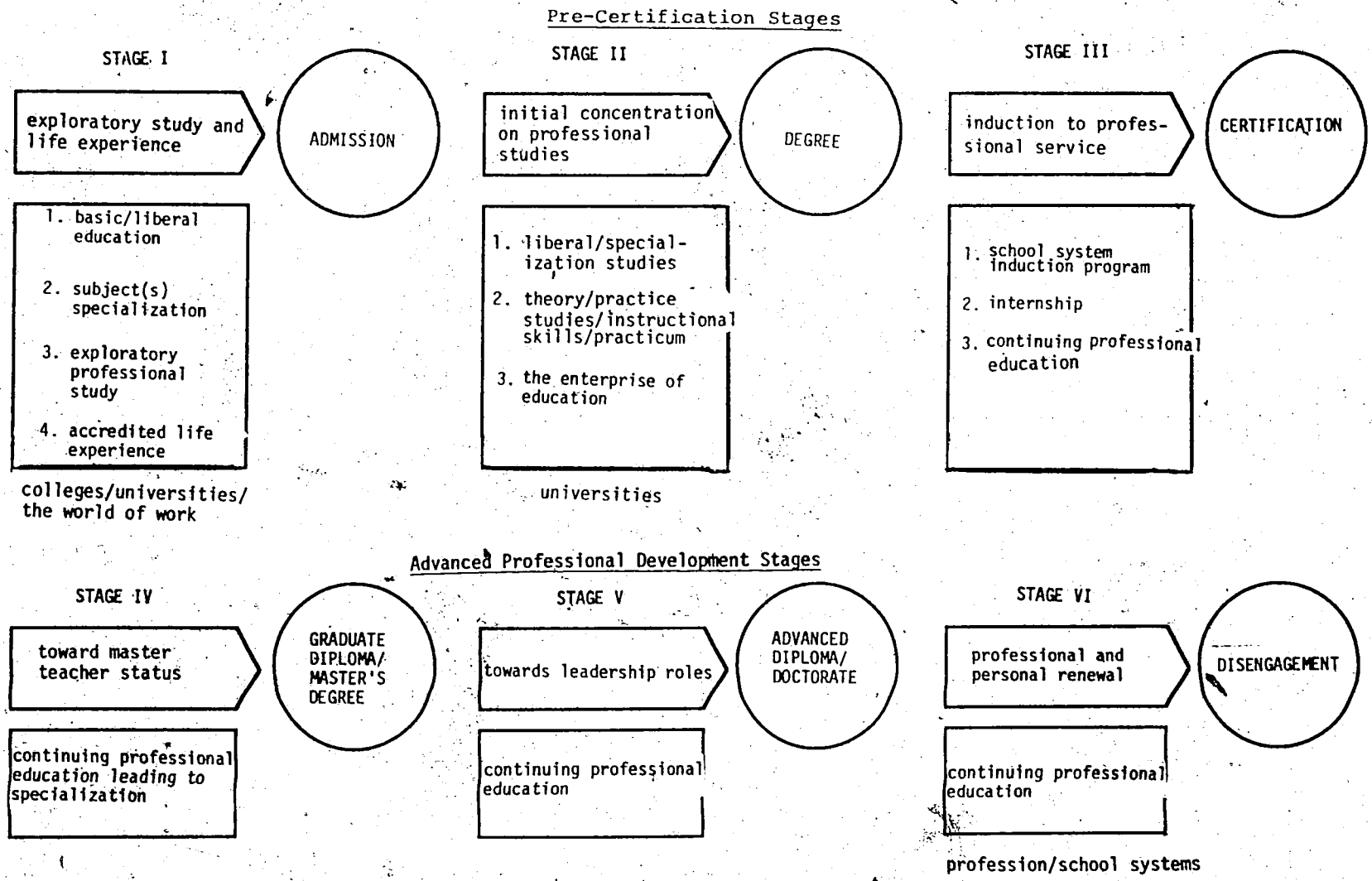
The study indicated that education and development of teachers should be viewed from a career perspective and that pre-service programs and continuing professional education programs (including graduate programs) should contribute to an overall process of development of the professional teacher. According to the report, education of teachers does not cease with the completion of pre-service preparation. The competent, successful teacher continues to learn and maintains a high level of proficiency. Teachers should engage in activities that provide for life-long education and professionalism.

Diagram 3, Professional Career Development adapted from "Planning Teacher Development from a Career Perspective" Anderson and others, October, 1982, shows the stages of a professional career with implications for continuing professional education. The Diagram indicates that the professional having successfully completed Stages I and II is systematically engaged in continuing professional education either to obtain master teacher status, leadership roles or professional and personal renewal until disengagement.

Technological change and the rapidity of that change makes continuing education as important an element in teacher education, especially business education teachers, as the pre-service programs. It is almost commonplace today to assert that a teacher's education is

Diagram 3

BUSINESS EDUCATION INSTRUCTORS' PROFESSIONAL CAREER DEVELOPMENT



never complete. The Department of Advanced Education in its policy governing future legislation for the professions and occupations stated that:

> All professions and occupations should develop formalized continuing education programs for their members through the resources of their own associations and through co-ordination with educational institutions. (1978, p. 7)

Further in 1972, the Special Legislative Committee on Professions and Occupations, chaired by the Member of the Legislative Assembly (M.L.A.) Catherine Chichak in its report noted that the professional in today's society is confronted with a constantly changing body of knowledge; therefore, the nature of the work is subject to continuous change. As a result, professionals must have the motivation to update continually.

The volume of new research and the current tendency toward post-graduate study is a real challenge to professsionals who want to keep up with new developments in their area of practice. According to the report, continuing education is, therefore, a very important issue, and should be viewed from the following aspects:

> Updating activities designed for those professionals presently active in the field, to help make themselves aware of current and expanding knowledge available;
>
> Upgrading and refresher courses designed for those who have not practiced in their field for some time. This would raise the levels of both their knowledge and competence to a point where they could requalify for active practice; and
>
> Specialization after graduation for those who wish to specialize in certain areas. Those who specialize may or may not require an additional certification (Special Legislative Committee, 1972, p. 14).

The report further suggested various methods of approaches to accomplish updating. Some of these methods are professional journals, annual conferences, workshops and seminars, guest lecturers, short courses and various kits of special media material. The report noted that even though members may not be required to write an annual examination, compulsory participation in combinations of these programs might ensure that members are at least exposed to new ideas.

The Committee also recommended:

> That all professions and occupations be encouraged to develop formalized continuing education programs for their members through the resources of their own association and through co-ordination with specific institutions (p. 14).

New emphasis must be placed on continuing professional education; teacher education must be continous and lifelong. According to Horowitz (1975)

> No matter how high the quality of the initial preparation, and no matter how realistic the field experiences...teachers will continue to require special help in their early years in the profession; and all of us who teach need to be active learners throughout our professional lives (p. 8).

In a study of Manitoba Businesses and Industries Interested in Participating in Professional/Technical Updating of Business and Vocational/Industrial Teachers, Cap and Porozny (1985) surveyed business and vocational/industrial teachers to find out their feelings on updating their Professional/Technical Skills and Knowledge. One hundred and sixty-three respondents comprising more than 80 percent reported that they felt a professional obligation to update skills and knowledge continually and that educational leave or sabbaticals with guaranteed position and salary as well as in-service days were suggested as times for such updating. The majority supported voluntary updating for retention of teaching certificates with educational leave and credit towards a degree of certificate as the major incentives. Industry and business-sponsored programs for updating were strongly supported.

Cap and Porozny (1985) noted that a number of provinces had decentralized updating activities to community colleges, professional teacher organizations, school boards, schools and to individual instructors. Alberta did not have a centrally organized updating program. Many teachers/instructors spend part of the summer working in the industries in which their teaching speciality is held, but this was by personal choice. There were occasional workshops to help instructors obtain some of the more recent innovations and procedures.

The report acknowledged that updating activity was necessary to keep teachers informed about what was happening in industry and business. That in-service training serves a useful purpose in updating despite its drawbacks of short duration, and of being conducted in educational establishments. The possibility exists that business teachers could require more time to assimilate new material than the normal in-service allows. Further, some concepts

could only be taught in a real life setting.

In a recent survey of business education instructors in Minnesota (1987) on their participation in continuing education over the past three years, 68 percent of the respondents reported that they had taken undergraduate and/or graduate credits. The most frequently cited courses taken were word processing and microcomputers. Many of the respondents plan to continue to take further courses in the future.

F. Professional Development

The term professional development days (PD days) usually refers to two days per school year in which schools/college systems in Alberta set aside for the professional development of their staff. On those two days, students do not attend school; however, teachers/instructors attend organized activities such as the bringing in of experts to update instructors on the most recent changes in their field of expertise. These events are normally held in the institution.

These professional development days are in addition to in-service programs; however, many of these programs are deemed useless. Hammons (1979) in a study of staff development was critical of staff development programs, and felt that one major reason staff development was being judged as worthless was the poor job of evaluating the results of staff development. Staff development should influence a teacher's ability, motivation, and climate in the work situation. Just having a staff development program was not enough, it must have produced desired results. McPherson (1981) said that staff development should involve teachers in setting goals, improving conditions of teaching and learning, and gleaning personal and professional meaning from their work as teachers. Teacher training had ignored the development of teacher's personal capacities and that staff development could be used to encourage teachers to become more professional and competent in the classroom. Staff development should involve teachers at all levels of planning and implementation. Teachers would not respond unless the administrators clearly trusted teachers and had a high expectation of their capacities.

Teaching centers are contributing to continuing education. Bohstedt (1981) described the operation of the Oak Ridge Teaching Center in its first year of operation, 1979-1980. The center was developed through Federal funds with a full-time staff of two. The center utilizes as many non-school resources. Bohstedt cites two ways to approach staff development: (a) a top-down approach which is the traditional approach, and (b) a bottom-up approach involving the "teacher center." If decisions which affect those who need to implement them were better made by the implementers, then there needed to be a vehicle for such decision making. Bobstedt suggested that such a vehicle was the teacher center with its policy board, advisory committees, and the community. Teacher centers are not frills. With declining enrollment and small teacher turnover, some lively and dynamic force was needed to be visible for promoting teacher growth and development. Bobstedt said the teacher center was one of the best ways to implement staff development.

As part of continuing education, reading professional journals is worthwhile; however, only one study has dealt with the topic of professional journals in relationship with business education. A survey in 1979 by Greenwald and Wolf discovered that, in most content areas, one or two journals were perceived as most informative. The first three perceived as most informative in business education were Business Education Forum, Balance Sheet, and The Journal of Business Education.

G. Summary

All studies and articles reviewed indicated the need for continuing professional education. The majority of the material revealed inadequacies and the need for improvement in existing continuing education programs. Additional research was lacking concerning what should happen in continuing education. The authors agreed that teachers should have more input in the planning and implementation of continuing education program.

In Alberta the Department of Advanced Education pointed out the need for all professions and occupations to develop formalized continuing education programs for their members. This need was also echoed in the Special Legislative Committee report that

updating activities should be designed for those professionals who are presently active in the field so that there is an awareness of current and expanding knowledge available. However, more empirical studies are needed to test the effectiveness of professional programs and to support educational practice. Education for teachers is an on-going process with the continuing necessity to update skills and knowledge.

Chapter III

METHODOLOGY AND RESEARCH DESIGN

A. Introduction

A review of the related literature was undertaken in the previous chapter. In this chapter the Research design and methodology are described. The purpose of the present chapter is to present the procedure for developing the instrument, the sampling procedure used, the data collection and interpretation employed and the implications of the obtained results.

B. Research Design

To adequately analyze the problem selected for the study, a multi-phased approach was used. The first phase involved the development of an instrument and the second phase consisted of using the instrument developed to investigate the testing of Houle's typology.

Development of an instrument for measuring business education instructors' activities involved the collecting and refining of a list of job-time business education activities. Several intermediate steps were utilized to determine face validity and content validity of the instrument; culminating with the final phase in which responses to the completed instrument were obtained from business education instructors. The data gathered in the last phase were then analyzed and compared with Houle's proposed modes of learning typology.

C. Instrument Design

According to Cervero and Dimmock (1985) there are two approaches to test Houle's Typology. One is to select job-time activities that are representative of the three modes of Houle's Typology and to use such activities to develop an instrument which could be administered to a sample. However, this approach they claim would bias the study in favour of accepting in advance the accuracy of the typology. It will not be clear whether the validity

of the typology, or the ability of the item writer is being assessed.

The second approach, according to Cervero and Dimmock, is to gather as many job-time activities regardless of typology from various sources. The instrument developed is then administered to a sample. The results from the data are then compared with Houle's typology. Cervero and Dimmock claims that this design is stronger as the possibility exists of including a broader range of activities from which the three modes of learning hypothesized by Houle could emerge. This second approach would be more affirmative than the first and may also facilitate the identification of new modes if such exist.

D. General Procedures for Instrument Development

An empirical approach for developing an instrument to measure CPE activities was first established by Brown (1960), Sheffield (1962) and Ingham (1963). This instrument was further refined by Litchfield (1965), culminating in the development of the Leisure Activity Survey (LAS). Litchfield's (1965) instrument was developed by first compiling an item pool of job time activities engaged in by the personnel in the occupation. One researcher who refined the item construction was Bevis (1971). Not only did she refine the procedure but provided guidelines for such procedures.

E. Item Construction Procedure

Bevis (1972), Associate Professor in the Department of Medical and Surgical Nursing at the University of Illinois, developed an instrument to test the Continuing Learning Activities of Neophyte Nurses. She developed the instrument because she felt that both job-time and leisure-time educational participation must be examined in order to evaluate the individual's "life style" in relation to continuing learning.

Bevis formulated practical guidelines for the development of instruments to test job-time and leisure-time educational activities. The process suggested for developing an item pool for business education instructor parallelled similar item construction techniques used by

Bevis (1972), Litchfield (1965) and Oddi (1964). The following are the ten practical guidelines suggested for developing a business education instructors' activity instrument:

1. The final form of the instrument will include only items describing activities which have educative value, although initially all types of activities will be collected.
2. The paper and pencil instrument would be designed for self-administration.
3. The terms used in the items would be easily understood by all business education instructors.
4. Items will describe specific behaviour rather than general role functions so as to enhance the respondent's freedom of reporting activities.
5. The instrument will be masked by selecting a neutral title and omitting references to continuing education or learning in the instructions or items to reduce positive or negative bias.
6. Responses will be in the range from 1 to 6 which is a six-point Likert scale, with one being the lowest and six the highest. Because of the statistics being computerized with "0" as a missing value, it was necessary to use a scale of 1 to 6.
7. The instrument will be of reasonable length, fifty or less items.
8. The selection of job activities would not be based on a definition of business education as this would limit the inclusion of certain job activities. The instrument is concerned with job activities that are engaged in by business education instructors; not with job activities that should be engaged in by business education instructors.
9. Degree of learning and quality of an educational experience will be considered beyond the scope of the instrument.
10. Items will be grouped into naturally-occurring categories to support expected frequency of item activity.

F. Specific Procedures used for Developing the Business Education Instructors' Activity Survey Instrument Designed for this Study

For this study an instrument called the Business Education Instructors' Activity Survey was developed (Powlette, 1988). In order to develop this instrument, the following steps were followed. These included Item Collection, Item Refinement, Classification of items according to Houle's typology, Identification of Educational Activity Items, Item Frequency delimitation and finally a Pilot test of the instrument.

G. Item Compilation for Business Education Instructors' Activity Survey Instrument

A search of ERIC data base and Dissertation Index was conducted to find out whether a job activities list existed for business education instructors. To conduct the search of ERIC the following descriptors were taken from the Thesaurus of Descriptors: Occupational Information, Career Choices, Teacher Education, and Competencies both as a descriptor and an identifier. From this search a total of only eight citation (hits) were obtained. Included in these eight citations were journal articles, education reports, and doctoral dissertations. Of the identified citations, two were particularly useful; one being a survey done by Burrow and Groneman (1976) which listed items of competencies for vocational teachers. The other was a DACUM chart listing competencies for vocational teachers.

H. Item Refinement

Items from the two data sources were then selected and refined by prefixing action words and expanding on the text in order to make it explicit. Similarly, other items were collected from Business Journals, Business Magazines, National Business Education Yearbooks and from observation of Cervero and Dimmock (1987). The activities identified were organized into categories that represent the basic functions performed by business education instructors. This was done to ensure no area was being overlooked.

Categories were then classified according to guidelines by Schantz (1966), Burrow and Groneman (1976), and the DACUM chart. The business education functions listed included Program Planning Development and Evaluation, Instructional Planning, Instructional Execution, Instructional Evaluation, Instructional Management, Guidance, School Community Relations, Student Vocational Organization, Professional Role and Development, and Coordination. These categories were not used in the final instrument because the justification for utilizing them was to ensure that all facets were utilized. Once the Business Education Instructor's Activity Survey Instrument was developed there was no need to retain that classification.

Initially, a total listing of 180 items were developed. However, after initial editing including removal of items relating to business education instructors' role perception and identification, the pool was further reduced to 156 items. These 156 items were next mailed to five experienced business education instructors in order to evaluate the items for comprehensiveness, level of specificity, representativeness, duplication and clarity. The instructors suggested elimination of some items in which there was duplication. They also combined items where appropriate and even added some items to the suggested list. As part of the process of refinement, particular attention was then devoted to the consistency of grammatical form, the minimization of value laden words, particularly those of an educational nature by having a graduate English major edit the items. The final item listing after evaluation by the instructors consisted of 108 activity items. See Appendix A for revised items and their classification categories.

The first mailing of the activity items took almost three weeks to return to the researcher. Because of time constraint, the researcher decided to personally deliver and collect the next two phases of the instrument development.

I. Identification of Educational Activity Items

Of the 108 items which then comprised the activities of the Business Education Instructors' Activity list, some activities were more likely to be undertaken by instructors for educative reasons than others. The next phase in the instrument development was therefore to obtain knowledgeable judgment from five business education instructors about the 108 items in terms of their educative value. This was necessary in order to reduce the overall length of the instrument and to enhance the likelihood of a more efficient response to the items.

It should be noted that Bevis had retained all items after refinement so as to mask the purpose of the instrument and not have respondents bias their responses. While Cervero and Dimmock (1983) in their first study kept all items for masking purposes, Cervero and Dimmock (1985) retained only items that were educative, because the 51 percent of the respondents had found that the instrument was too long and the response to it too poor. Kovalik (1986), however, did not mask his study, but utilized only educative items as he felt that with a broad range of educative activities and the omission of the word learning from the instrument, there was sufficient masking of the instrument. Kovalik had a 72.9 percent response rate.

In this study, the researcher decided to follow the steps used by the last two researchers by listing only educative items, because there was a broad range of activities with educative value. The researcher further decided that with the omission of the word "learning" from the Business Education Instructors' Activity Survey instrument there was sufficient masking of the instrument to reduce any substantial bias.

When Cervero and Dimmock (1985) conducted their study of nurses utilizing Bevis's instrument, they found that the shorter version containing only educative activities had a significantly higher response rate than the longer version. Bevis' longer version instrument contained 108 items while the shorter version contained only 48 items. As a result of the analysis by Cervero and Dimmock (1985) on their use of the two versions of instruments, the present researcher selected a shortened version with only 50 educative items in order to

accomplish the purposes of this study.

As a consequence, a process similar to Bevis was employed to identify items having educative value. The items were reproduced on card, one item per card. Two envelopes were prepared, one had a definition of "educative value," the other envelope had a definition of "non-educative." After telephoning the five randomly selected business education instructors, the cards were delivered with a covering letter giving a brief summary as well as specific instructions to participants. Participants were asked to sit at a table or desk with both instruction envelopes in front of them and read the statement on each of the white cards given. After careful reading, they were to place each white card under the appropriate envelope -- the one in which to their judgment the statement on the white card properly belongs. When finished they were to have two bundles of cards. They were to place one of the given elastic bands around each bundle. When finished they were to call the researcher and the package will be collected. Appendix B is a sample of the covering letter with instruction for sorting the cards.

The results of the judges categorization are listed in Appendix C. It should be noted that the criterion used by the investigator to accept an item as "educative" was whether or not three or more judges selected the same activity as educative. Such an acitivity was consequently retained.

Table 3.1 contains the number of items judged by each member of the panel as having educative value. The number of educative items ranged from 40 to 54, with a mean of 48. An examination of Table 3.1 reveals very high agreement among the judges (X=48 percent).

Table 3.2 indicates a strong agreement regarding the educative/non-educative activities. The highest evaluation were twenty-five items identified as educative by all five judges; however, nine items were identified as educative by four judges and 15 items were judged educative by three judges. The lowest evaluation were 13 items which received only one vote followed by 13 items which received two votes. Thirty-three items received no educative votes. The last three categories accounted for 59 items or 54.6 percent of the total. In the borderline cases 15 items received votes from three judges while 13 items received only

Table 3.1

Number of Educative/non-educative Activities by Business Education Instructor Judges

Business Education Instructor Judges	Educative	Non-educative
1	53	55
2	41	67
3	54	54
4	52	56
5	40	68

Table 3.2

Educative Items by Number of Business Education Instructor Judges

Number of Instructor Judges	Total Educative Items
5	25
4	9
3	15
2	13
1	13
0	33
	108

two votes. A single vote either way would have moved these items from one category to another.

An examination of the voting patterns of the judges show fairly consistent patterns and relatedness of voting. For example, of the 15 items given three votes, Judge 4 voted positively for 14 items while Judge 3 voted for all 15 items. It seems evident that the patterns of selecting educative items and the voting patterns of judges are highly consistent, so that confidence in the resulting selection of items is assumed.

J. Item Frequency Delimitation

In order for the respondents to accurately indicate their participation in the educative activity of the Business Education Instructors Activity Survey Instrument, it was necessary to arrive at appropriate frequency categories In this context, the 50 educative items were next delivered to another three business education instructors in order for them to assign the frequency of each item.

Frequency categories used in this study were based on the basic structure of Litchfield (1965) Leisure Activity Survey (LAS) and Bevis (1971) Job Activity Survey (JAS). Bevis's categories involved daily, weekly, monthly and yearly time periods. This category allowed for activity items to be placed in a frequency category consistent with the expected job-time participation of respondents and also provided for sufficient variation of meaningful data collection and analysis.

The response scales for the LAS and JAS consisted of both combinations of time intervals and point of time responses. For example, in the LAS and JAS the response scale for the first frequency category contained the six statements: "not at all," "less than once a week," "once or twice a week," "three or four times a week," "once or twice a week," "three or four times a week," "once a day," and "more than once a day" represents a point in time response, while the other statements are time interval responses. Other sections of the LAS and JAS contained similar combinations with some scales having two point-of-time categories instead.

For the present study, response scales were developed using only time intervals, consistent frequency ranges and number of responses categories. These differed from the

LAS and JAS in that there were no point in time intervals or two point-of-time categories.

To establish the content validity of the Business Education Instructors' Activity Survey to be used in the study, a panel of three full-time business education instructors were asked to assign the 50 educative activities to frequency categories. Cards were delivered to instructors who after being briefed about the study were asked to place each activity, according to his/her experience into an appropriate response category.

Table 3.3 contains the results of the frequency selection. An examination of the results show that only two of the 50 items (4 percent) were assigned to a daily frequency. The panel suggested that the two items placed on a daily basis could go either with the daily or weekly frequencies. However, they suggested that if those two items were placed on a weekly frequency more accurate results would be obtained. As a result of the suggestion of the panel, the daily category was eliminated and the two items placed under the weekly category.

K. Pilot Study

Another process used to develop and refine the instrument was a pilot study. The preliminary survey instrument was administered for this purpose to five business education instructors located throughout different areas of the Province of Alberta. The five business education instructors were contacted, and asked if they would participate in the pilot testing of the instrument. One declined as a result of being in the middle of administering an examination. She was replaced by another instructor. These instructors were given a complete explanation of the purposes and objectives of both the pilot study and the survey. In addition, they were asked to be both honest and critical as they responded to the items. A covering letter (Appendix D) giving a very brief summary of the study as well as specific instructions to the participants accompanied the survey instrument. Respondents were asked to do the following:

a. check each item to ensure that the question is easily understood;

b. check the frequency to ensure that each item is in the correct frequency, i.e. (day),

Table 3.3

Number of Items of Frequency Category

Frequency Category	Number of Items
1 (daily)	2
2 (weekly)	22
3 (monthly)	10
4 (yearly)	16

week, month/year;

c. add comments as necessary;

d. complete questionnaire and note time needed for completion;

e. return questionnaire by February 26 in the enclosed self-addressed stamped envelope.

A combination of courier, personal delivery and mail was utilized for the delivery. Meaningful and constructive changes were suggested by the respondents. For example, an important change was in the wording "this year" as used in the activities section of the instrument which was changed to mean specifically the past twelve months; by inserting "and/or" between general interest newspapers and periodicals; and change "re-evaluated" to "adjusted." As a consequence of the process of developing the instrument and the pilot tests results, there seemed to be sufficient evidence that the instrument was ready for use with business education instructors.

L. Instrument Validity and Reliability

According to Cronbach (1949), "a test (or instrument) is valid to the degree that we know what it measures or predicts" (p. 48). Therefore, validity of an instrument indicates the extent to which an instrument measures what it is intended to measure. The reliability of an instrument on the other hand indicates the extent to which a measurement instrument is

stable or equivalent and will yield the same scores if replicated with use.

Validity and reliability of the instrument developed for this study are determined separately. It is assumed that high levels of validity and reliability are needed for a researcher to have confidence in a measure developed.

M. Test for Validity

Both the content and face validity of the instrument developed were determined in this study.

Content Validity

According to Mehrens and Lehman (1984) content validity

> is typically determined by a thorough inspection of the items. Each item is judged on whether or not it represents the specified domain. Although a detailed, systematic, critical inspection of the test items is probably the single best way to determine content validity, such inspection does have some drawbacks. It is subjective and does not yield any quantitative expression. Two persons -- whether or not they have the same understanding of the content domain -- may well make different judgments about the match of the items to the domain (pp. 290-291).

Sampling validity in this study was met by the careful multi-phased instrument construction process described earlier. The finalized version of the instrument was developed only after at least 19 business education professionals were involved in four different phases of the instrument's development.

In addition, potential items were collected from a variety of sources, and the procedures used throughout the development of the instrument were consistent with accepted research patterns of establishing the content validity of an instrument. Based on the careful systematic and thorough construction process, it was concluded that the Business Education Instructors' Activity Survey instrument contained a sampling of items fully representative of the job-time activities of business education instructors. The responses of the various professionals were consistent throughout thus contributing to the content validity of the instrument and its comprehensiveness.

Face Validity

With respect to establishing the face validity, Mehrens and Lehman (1984) caution the researcher to avoid confusing content validity with face validity. According to Mehrens and Lehman

> face validity is whether the test looks valid "on the face of it." That is, would untrained people who look at or take the test be likely to think the test is measuring what its author claims? Face validity often is a desirable feature of a test in the sense that it is useful from a public acceptance standpoint. If a test appears, irrelevant, examinees may not take the test seriously, or potential users may not consider the results useful (p. 295).

The face validity of the instrument developed for this study was established by submitting the completed instrument to the researcher's study committee. The members of the committee agreed that the instrument appears to be measuring what the author claims it is intended to measure. The responses sought seem relevant and appropriate.

N. Test for Reliability

The reliability of the Business Education Instructors' Activity Survey was determined by calculating Cronbach's coefficient alpha. According to Nunnally (1978), coefficient alpha is the basic calculation for assessing the internal consistency of a domain sampling instrument, because alpha represents the expected correlation of one test with alternative forms containing the same number of items.

A coefficient alpha of 0.80 was selected as the minimum acceptable level for instrument reliability. Using the procedures for calculating reliability, the standardized alpha score for the instrument was 0.87. The results compare favourable with the 0.87 obtained by Kovalik (1986) in his study with pastors. Kovalik designed an instrument along the criteria suggested by Bevis. Similar results were obtained by Cervero and Dimmock (1983) who obtained an alpha of 0.87 while Cervero and Dimmock (1984) in their study of nurses obtained an alpha of 0.89 utilizing Bevis' instrument. Thus, the Business Education Instructors' Activity Survey instrument of 56 educative activity items was accepted as a

reliable instrument because its calculated alpha of 0.87 is consistent with those of Cervero and Dimmock, and Kovalik.

O. Procedures

Thesis Committee Selection

In the fall of 1987 the researcher approached Dr. Darius Young of the Department of Industrial and Vocational Education who unhesitatingly agreed to supervise the thesis preparation. As well, Dr. Clement King from the Department of Educational Psychology and Professor Art Deane from the Department of Industrial and Vocational Education were approached, and they both agreed to be the other two members in the Committee.

A proposal was developed including a timeline, and submitted in late December 1987. After refinements the proposal was approved in early January, 1988.

The months of January, February and early March were spent on the many phases of developing the Business Education Instructors' Activity Survey instrument. The several phases and pilot testing took ten weeks.

Preparation and Distribution

Having developed and pilot tested the instrument, the final version was typeset resulting in the Business Education Instructors' Activity Survey instrument (Appendix E). Individualized letters were prepared on the Department of Industrial and Vocational Education letterhead by utilizing a Mail Merge function on a word processor. Each addressee's envelope was typed rather than affixing a label, as it was felt that labels detracted from the appearance and labels were associated with "bulk" mail. Labels, however, were affixed on the stamped return envelopes. Each letter (Appendix F) were individually signed and the letter which contained a brief explanation of the study, a questionnaire, a returned stamped self addressed envelope were mailed.

Mailing of 129 (N=129) questionnaires took place during the last two weeks in March, 1988, with a deadline for return of April 5, 1988. Two weeks after initial mailing a telephone call was made to each institution as a reminder.

P. Population

All business education instructors (N=129) in non-university, postsecondary institutions sponsored or administered by the Province of Alberta was used for this study. These institutions were located in the regions of Northern Alberta, Edmonton, Calgary and Southern Alberta. The population had a descriptive title of instructor, senior instructor, chairperson, program supervisor and department head. Further, the sample had performed teaching duties during the past twelve months. Since the study was designed to investigate continuing education of full-time business education instructors, only respondents who indicated their position as "full-time instructors" were used in the analysis. One of the problems in the population was the classification of full-time and part-time, since many institutions now employ staff on a continuum of an eight-month contract, many business education instructors, classified themselves as part-time. The data were adjusted to reflect this conflict.

In the population of business education instructors included in the analysis the range for years of teaching was from 1.5 years to 36 years with a mean of 10.7 and a standard deviation of 7.1. The chronological age range for business education instructors was 30 to 65. There was a wide spectrum of qualifications from College Diploma to doctoral candidate. Those holding an undergraduate degree were 75.1 percent, with 14.7 percent a master's degree and 2.2 percent working on a doctoral degree. Other qualifications were 2.2 percent CGA (Certified General Accountant) and 1.1 percent had achieved 4th level CMA (Certified Management Accountant).

Table 3.4 contains details regarding the number of questionnaires mailed and the response rate for the various regions. A look at Table 3.4 reveals that an excellent response rate (72.7 percent) was received. It could be seen from Table 3.4 that a fairly high response

Table 3.4

Number of Surveys Mailed and Response Rates by Business Education Instructors

Region	Number mailed	% of total	Number of responses	% of total	Response rate %
Northern Alberta	31	24.03	28	21.70	90.32
Edmonton including Red Deer and Stony Plain	34	26.36	29	22.48	70.58
Calgary	49	37.98	31	24.03	63.27
Southern Alberta	15	11.63	10	7.75	66.66
GRAND TOTAL	129	100.00	98	75.97	72.70

rate was received from the Northern region. A 70.5 percent response rate was received from Edmonton, but that figure includes responses from Red Deer and Stony Plain. A response rate of 66.6 percent was obtained from Southern Alberta. The lowest response rate, 63.2 percent, was received from Calgary. The desired objective of having a 60 percent or better representation from the regions had been achieved.

Of the 129 questionnaires mailed to business education instructors, 98 or 75.97 percent were returned of which 6 or 6.1 percent were unusable for various reasons; for example, retired, unable to forward, part-time or 1st term teaching. Table 3.5 contains qualified responses by region. A look at Table 3.5 shows that each region had a decline in the qualified responses with the largest decline coming from the Northern region. Approximately 47 percent of institutions were located in areas with a population greater than 500,000.

Q. Data Collection

The final version of the study instrument was an eight-page self-reporting questionnaire named The Business Education Instructors' Activity Survey (Powlette, 1988)

Table 3.5

Qualified Responses by Region

Region	Frequency	% of Total
Northern Alberta	25	27.20
Edmonton (including Red Deer and Stony Plain	27	29.34
Calgary	30	32.60
Southern Alberta	10	10.86
	92	100.00

Appendix E. The questionnaire was mailed to 129 (N=129) business education instructors in non-university, postsecondary institutions along with a covering letter (Appendix F) briefly explaning the study. A stamped return envelope was also included. Two weeks after the initial mailing, a reminder follow-up telephone call was made to institutions. The response to this final report to complete the questionnaire was 25 percent.

R. Data Analysis

Data were analyzed using the Statistical Package for the Social Sciences X, program installed on the Amdahl 580/5860 at the University of Alberta Computing Services. Various statistical procedures were judged as appropriate for the type of data and calculations required. These included subprograms FREQUENCIES, ONEWAY Analysis of Variance, CORRELATIONS and FACTOR ANALYSIS.

The FREQUENCIES subprograms reported the frequency of occurrence of each unique value detected for a variable. Raw counts, percentage of total and cumulative percentages were produced along with measures of central tendency and variability. These measures were used to provide descriptive statistics of the population of instructors selected

for the study.

ONEWAY is a subprogram that computes one-way analysis of variance and a variance of post-hoc tests. Comparisons of individual means are conducted with the Scheffé test. A particular advantage of the Scheffé method applicable to this research is its ability to test differences between means of groups with unequal N's. The ONEWAY Analysis for Variance program was used in this study to determine whether factors such as age, teaching experience, size of community and location of institutions of the population of instructors played a role in determining which learning activity they preferred.

S. Factor Analysis

Several factorial solutions were tested in the present study to identify the ones that provided the best explanation of the data. The data were analyzed by means of factor analysis procedures to determine if the educative items produce patterns of learning comparable to Houle's three-factor typology.

The principal component method was selected for initial factor extraction since by this method each factor extracted explains more variance than the factor loadings on a factor. The oblique rotation factor is the approach used in this study because Houle (1980) suggests the dimension are correlated when he describes the modes of learning as "overlapping."

Cervero and Dimmock (1985), and Kovalik (1986) used factor analysis in their study to initially test their data for a three-factor solution since this was the number of learning modes hypothesized by Houle. The present study takes the same approach by testing first for a three-factor solution followed by higher level factors in order to discover which factor solution best described the data. This was suggested by Cervero and Dimmock (1985), and Kovalik (1986) who surprisingly discovered a four factor solution which better described the data. They noted that a five-factor solution did not improve theoretical interpretation of the data.

T. Criteria for Categorizing Job-Time Activities

In order to interpret the results of the factor analysis procedure, it was necessary to have a consistent way of classifying job-time activities into one of the three major modes. In Houle's (1980) initial presentation of the typology, he suggested some classification criteria to be used. These were subsequently amplified by Cervero et al (1983), Cervero and Dimmock (1985) and Houle (1984).

Table 3.6 contains the prominent characteristics of the major modes of inquiry, instruction and reinforcement summarized from Kovalik (1986), Cervero and Dimmock (1985), and Houle (1980). This table was also used by the researcher as general criteria for each of Houle's major modes.

While Table 3.6 is helpful in a general way to distinguish between the major modes of learning, it was necessary for the investigator to develop a more detailed set of criteria to identify the modes specifically engaged in by business education instructors. The uniqueness of this professional group necessitated criteria that are specific to the vocation, particularly to the mode of reinforcement in which the unique activities that describe professional groups may be more prominently expressed. This section, therefore, presents a description of the three major modes from business education instructors' perspective.

The mode of inquiry is the process business education instructors use to seek information on technological and other changes in order to develop new ideas and programs for their institutions. Usually the instructors develop knowledge through group participation in which such knowledge is not predictable in advance, but it is acquired through group involvement. It involves new ways of thinking and synthesizes new ideas, the knowledge of new techniques and strategies for action as well as new policy. The inquiring professional participates in encounter groups, seminars, clinics, and discussion groups. Such participation can lead to the development of programs and projects, the exploring and identifying of alternatives which would facilitate faster assimilation, evaluating options that have greater potential for growth, planning strategies perhaps for better delivery, and investigating needed or available resources. It is secondarily educative. The inquiry mode involves conducting a

Table 3.6

General Criteria of Major Learning Modes

Criteria	Major Modes of Learning		
	Inquiry	Instruction	Reinforcement
Instructor role	Facilitator Guide	Expert Dispenser Designer	Colleague Self Mentor
Learner role	Contributor	Receiver Observer	Participant
Outcomes	Not predictable Concepts Plans	Pre-determined by instructor Accomplish set objectives	Improved client service
Evaluation	Informed judgment Unstated	Based on objectives Known at beginning	On-going Continuing
Methods	Dialogue Brainstorm	Lecture Books, video	Practice on the Job
Learning role	Secondary By-product	Primary Deliberate	Secondary By-product
Key work	Developing	Disseminating	Utilizing

community survey or attending a professional business education meeting.

The mode of instruction for business education instructors continuing professional education is the process used to accumulate content. It is deliberative in that the professional plans to seek specific knowledge or skill from a source. Business education instructors use the mode of instruction to acquire new skills and knowledge by utilizing sources such as teachers, books, courses. Success in this mode is measured by the amount of skill and knowledge acquired. Examples of this mode for a business education instructor are: (a) Discuss teaching strategy with a colleague, (b) Take a higher education course.

The mode of reinforcement for business education instructors is the process used for performing and conducting activities. This category is secondarily educative in that learning may occur as a by-product. The idea is to improve what is already known so as to enhance quality, this could involve repetition of a skill to the point where it is internalized and the reproduction of the skill is uniquely the instructors. Examples of the mode of reinforcement are Item 29 - Evaluate program so as to improve and provide quality service and Item 49 - Visited or contacted an Agency such as Canada Employment Centre to become familiar with services offered.

Using the descriptive criteria in this section as guidelines, the researcher categorized the 50 items on the business education instructors' survey to assist in the interpretation of the results in the next chapter. The activity classification is contained in Appendix G.

This chapter contained the basic approach to the study, procedures for instrument development and tests for validity and reliability, pilot test, an analysis of sample selection and response, descriptions of data collection and analysis including criteria for interpreting the major modes of learning. The next chapter presents the research findings.

Chapter IV

TREATMENT OF DATA AND FINDINGS

A. Introduction

This chapter presents the treatment of the data and results of the research. The first section of this chapter contains the results of the initial factor extraction and rotation; the second section provides the results of the statistical analysis of the selected four-factor solution and demographic variables.

B. Principal Component Method

In order to identify underlying factors in the data, the Principal Components method was utilized. At the beginning the number of factors which may exist was determined. Factors were extracted from a matrix of item correlations by the principal components method in which the first principal component which accounted for the maximum possible variance was identified; the second component which accounted for a maximum in the residual space with the first component was next removed. Finally the third component constituted a maximum in the residual space excluding the first two components. This procedure is continued depending on the number of factor solutions with the last component always accounting for whatever variance remains.

There are several ways in which the first stage can be accomplished. One way used by the researcher was to examine the initial statistical output of the Principal Component analysis extraction which produced an ordered listing of eigenvalues.

Another method is to visually inspect a scree plot. This type of plot is a graphic presentation of eigenvalues. A scree plot for the present study is contained in Appendix H. The plot was interpreted to identify the place at which the plot line decreases in its descent and begins to develop into a smooth, nearly straight line to the horizontal axis. An examination of the scree plot in Appendix H indicates a solution of about four factors may be

most appropriate. The methods used are simply indications of the potential number of factors and provided only guidelines rather than mathematical determinations.

Based on the number of factors suggested in Houle's typology, the work of Cervero and Dimmock (1985) and the study of Kovalik (1986), the researcher started the analysis process by specifying three- and four-factor solutions. Additionally, the researcher examined the results of two-, five-, six-, and seven-factor solutions in an effort to identify the solution which best accounted for and described the data. The additional solutions were attempted to provide potential responses to the second research questions as to whether professional education activities of business education instructors are explained by other single or multiple-factor solutions that may suggest other modes of variations of learning not hypothesized by Houle.

Table 4.1 contains the number of activity items by factor solution for each of the various factor solutions. Only items with factor loadings of 0.30 or higher are included. A look at Table 4.3 indicates that all the factors with the exception of Factor 2 have an item extraction of over 45 items. However, on reviewing the matrix from which the items were tallied for Factors 6 and 7 it was noted that Factor 6 and 7 contained a considerable number of negative items. For example the last factor of the 6-factor solution contained only five items, three of which were negative; the last factor of the 7-factor solution contained only four items, two of which were negative. Therefore the sixth and seventh factor solutions have not been included as a suitable interpretation of the data as it would have been difficult to explain since there was no reverse items on the survey instrument. However, the Three-factor, Four-factor and Five-factor solutions have been selected for data analysis using the principal component method.

C. Factor Solutions

This section contains a presentation and discussion of the results of the analysis of the three-, four-, and five-factor solutions. First, data is presented and analyzed from the three-factor solution since the typology suggested by Houle consisted of three modes of

Table 4.1

Number of activity Items by Factor Solutions

Factors extracted	2	3	4	5	6	7
Items included	37	47	46	48	47	47

learning. Second, data from a four-factor solution will be presented and discussed as it is consistent with Cervro and Dimmock (1985) and Kovalik (1986) who suggested a four-factor solution best fitted their data. Third, the researcher will present data from a five-factor solution since it accounted for the largest percentage of variance.

Item descriptions have been shortened in some cases; however, for a complete statement refer to Appendix A. Those items loading highest on a factor are marked with an asterisk. Factor loadings are rounded off to two decimals.

D. Three-Factor Solution

Table 4.2 is a matrix of the data for a three factor solution. The three-factors include 47 of the 50 items with a cumulative variance of 29.8 percent. A look at Table 4.2 shows that 18 items accounted for 15.7 percent of the variance. The factor loading range from 0.30 to 0.70. Examples are Item 5 -- Conducted instruction for usually slower and/or more capable students. Item 20 -- Guided students in the techniques of role playing and simulation. This first factor is consistent with Houle's instruction typology. This common factor has been labelled as the instruction factor as all the items refer to the process of disseminating established knowledge, skills or sensitiveness. The instructor or facilitator already knows the information and is facilitating or conveying it.

Table 4.2

Rotated Factor Matrix
Result of Factor Analysis of the Correlation Matrix
Factor Loadings of Items by Factor 1-3

	Items	Factors		
		1	2	3
11	Counselled a business education student	0.70*	0.20	0.10
5	Conducted instruction for usually slower/and or more capable student	0.69*	-0.02	-0.11
15	Experimented with different approach to some aspect of business education	0.67*	0.12	-0.06
12	Discussed teaching strategy with colleague	0.67*	-0.06	0.16
18	Conducted group discussions	0.66*	0.21	0.16
17	Discussed a business education topic with a colleague	0.62*	0.04	0.20
16	Reviewed and adjusted own lesson plans	0.55*	0.01	0.25
21	Held conference with borderline students to evaluate progress	0.52*	0.15	0.01
13	Participated in team teaching	0.49*	0.29	-0.13
43	Took a higher education course	0.46*	0.21	0.23
2	Trained student to serve as peer instructors	0.46*	0.08	-0.03
6	Assisted students engaged in programmed Instruction	0.45*	-0.04	-0.04
20	Guided students in the techniques of role playing	0.42*	0.01	0.23
50	Took an interest course	0.38*	0.20	0.33
14	Prepared and conducted teaching sessions for class outside of business education specialization	0.36*	-0.14	0.11
7	Consulted a teaching techniques text	0.32*	0.14	0.11
10	Guided students during laboratory experience, i.e., accounting, computer applications	0.32*	0.09	-0.29
9	Consulted a general reference such as an encyclopedia	0.30*	-0.13	0.21
4	Consulted a general reference such as a dictionary	0.18	-0.17	0.15
38	Attended a conference sponsored by a professional organization	0.09	0.71	0.00

Table 4.2 (Continued)

11	Served on a Business Education Advisory Committee	-0.12	0.64*	0.03
44	Attended business meeting of professional organizations	0.14	0.56*	-0.01
19	Read a business education periodical	-0.10	0.54*	-0.14
46	Attended community organization meeting	-0.13	0.51*	0.28
36	Presented a business education related speech to peers, or faculty or community	0.08	0.49*	0.19
40	Conducted a community survey	0.04	0.47*	0.25
42	Consulted with a commercial representative	-0.19	0.46*	0.24
34	Assisted the screening of prospective students	0.31	0.43*	0.11
49	Conferred with another professional	-0.05	0.42*	0.29
32	Served as moderator for a panel discussion	0.27	0.42*	0.08
41	Conferred with a curriculum specialist	0.20	0.41*	0.04
27	Conducted student follow-up study	0.19	0.41*	0.03
1	Read general interest newspapers and/or peridicals to maintain awareness	[illegible]	0.41*	-0.19
23	Prepared teaching aid	-0.13	0.41*	-0.00
24	Rehearsed skills useful to job of business education instructor	0.25	0.39*	0.05
33	Wrote a scholarly paper on a business subject and submitted it for publication	0.20	0.36*	-0.04
22	Read an "inspirational book"	0.20	0.33*	-0.00
39	Conducted workshops for benefit of staff	0.21	0.31*	0.06
8	Listened to informational media program	0.16	0.29	0.13
29	Evaluated one's own business education program	0.20	-0.05	0.72
30	Consulted a psychology text	0.01	-0.14	0.59*
25	Developed long range plans for business education programs	0.20	0.09	0.56*
45	Analyzed or listened to instructions of peers	0.06	0.07	0.54*
37	Participated in non-teaching school function	-0.07	0.32	0.52*
48	Visited or contacted an Agency such as Canada Employment Centre	0.26	0.22	0.44*
35	Attended in-service education meetings	-0.05	0.40	0.43*
3	Consulted a textbook, e.g., Office Procedures	0.22	-0.13	0.40*
47	Co-ordinated "on the job" instruction for other instructors	0.11	0.33	0.36*
28	Held conferences to help individual students meet personal needs	0.11	0.19	0.34*
31	Maintained liaison with community	-0.06	0.26	0.29

"*" Indicates item selected for the particular factor loading

A look at Table 4.2 further reveals that the second factor of the three factor solution contains 19 items and accounted for a variance of 6.4 percent. There is no one distinctive characteristic of this second factor, but rather there is a blend of items some are inquiry; for example, Item 26 -- Served on a Business Education Advisory Committee or a reinforcement item such as Item 36 -- Presented a business related speech to peers, or faculty or community.

An examination of Table 4.2 shows that the third factor contains ten items all of which have loaded substantially on the third factor. As well Items 35 and 47 have almost equal loading on other factors. These ten items accounted for 5.7 percent of the variance. These variables which cluster together were all positively correlated and can be interpreted as having something in common; for example Item 29 -- Evaluated a business discussion program, Item 25 -- Developed long range plans for business education programs. This third factor is related to Houle's reinforcement (performance) typology, as well there is the added dimension of activities being initiated by the instructor. This common factor has been labelled as the reinforcement factor. All the items of the third factor of the three-factor solution are indicative of business education instructors initiating, integrating or practicing ideas so that they become a fundamental part of job performance in the delivery of quality service.

Thus, while some interpretable patterns began to emerge from the three-factor solution, especially with factor 1 instruction; Factor 3 reinforcement labelling can be improved. The second factor, however, included items that were clarified in subsequent solutions.

E. Four-Factor Solution

Table 4.3 is a matrix of the data for a four factor solution. The four-factors include 45 of the 50 items with a cumulative variance of 34.5 percent. A look at Table 4.3 shows that the four-factor solution gives a better understanding of the data of this study. Also, since Cervero and Dimmock (1987) and Kovalik (1986) concluded that a four-factor solution best fit their data, it was important to provide a set of data from the present study for comparison

Table 4.3

Rotated Factor Matrix
Result of Factor Analysis of the Correlation Matrix
Factor Loadings of Items by Factor 1-4

Items	Factors			
	1	2	3	4
12 Discussed teaching strategy with a colleague	0.71*	-0.01	-0.07	0.11
11 Counselled a business education student	0.68*	-0.08	0.25	0.07
5 Conducted instruction for usually slower and/or more capable students	0.67*	-0.08	0.10	-0.14
15 Experimented with different approach to some aspects of business	0.65*	0.03	0.19	-0.08
17 Discussed a business topic with a colleague	0.63*	0.02	0.05	0.17
18 Conducted group discussion	0.59*	-0.01	0.42	0.16
16 Reviewed and adjusted own lesson plans	0.58*	0.02	0.00	0.22
21 Held conferences with borderline students to evaluate progress	0.53*	0.11	0.11	-0.00
43 Took higher education course	0.49*	0.16	0.14	0.21
6 Assisted students engaged in programmed instruction	0.46*	-0.03	-0.01	-0.07
13 Participated in team teaching	0.45*	0.14	0.33	-0.13
20 Guided students in the techniques of role playing and simulation	0.43*	0.01	0.05	0.21
7 Consulted a teaching techniques text	0.40*	0.26	-0.12	0.07
9 Consulted a general reference book such as an encyclopedia	0.39*	0.04	-0.30	0.16
50 Took an interest course	0.35*	0.07	0.25	0.33
19 Read a business education periodical	-0.03	0.64*	0.02	-0.16
46 Attended community organization meeting	-0.05	0.58*	0.04	0.27
26 Served on a Business Education Advisory Committee	-0.11	0.58*	0.29	0.04
23 Prepared a teaching aid	-0.04	0.55*	-0.07	-0.02
38 Attended a conference sponsored by a professional organization	0.07	0.55*	0.46	0.01
40 Conducted a community survey	0.11	0.55*	0.06	0.23
35 Attended in-service education meeting	0.02	0.47*	0.00	0.41
1 Read general interest newspapers and/or periodicals to maintain awareness	0.04	0.47*	0.05	-0.21
44 Attended business meeting of professional organization	0.13	0.47*	0.31	-0.01
8 Listened to informational media	0.25	0.41*	-0.07	0.09

Table 4.3 (Continued)

42	Consulted with a commercial representative	-0.18	0.40*	0.21	0.26
27	Conducted student follow-up study	-0.21	0.38*	0.17	0.02
24	Rehearsed skills useful to job of business education instructor	0.25	0.31*	0.23	0.04
14	Prepared and conducted teaching sessions for class outside of business	0.29	-0.30*	0.18	0.12
39	Conducted workshops for the benefit of staff	0.09	-0.00	0.55*	0.10
34	Assisted in the screening of prospective students	0.24	0.18	0.49*	0.12
47	Co-ordinated "on the job" instruction for other instructors	0.24	0.18	0.49*	0.12
36	Presented a business education related speech to peers, or faculty or community	0.02	0.27	0.46*	0.21
32	Served as moderator for a panel discussion	0.20	0.20	0.45*	0.10
4	Consulted a general reference book such as a dictionary	0.30	0.09	-0.42*	0.09
28	Held conferences to help individual students meet personal, and vocational needs	0.03	-0.04	0.38*	0.37
2	Trained students to serve as peer instructors	0.36	-0.14	0.37*	-0.02
33	Wrote a scholarly paper on a business subject and submitted it for publication	0.15	0.20	0.35*	-0.03
3	Conferred with a curriculum specialist	0.17	0.26	0.34*	0.05
22	Read an "inspirational" book	0.17	0.22	0.27	0.00
29	Evaluated one's own business education program	0.23	-0.07	-0.01	0.71*
30	Consulted a psychology text	0.09	-0.01	-0.25	0.57*
45	Analyzed or listened to instructions of peers	0.01	-0.10	0.25	0.56*
25	Developed long range plans for business education programs	0.19	-0.01	0.15	0.56*
37	Participated in non-teaching school functions	-0.00	0.36	0.01	0.51*
48	Visited or contacted an agency such as Canada Employment Centre	0.25	0.10	0.23	0.44*
3	Consulted a text book e.g. Office Procedures	0.33	0.05	-0.32	0.36*
49	Conferred with another professional	-0.07	0.30	0.30	0.31*
31	Maintained liaison with the community	-0.06	0.19	0.17	0.30*
10	Guided students during laboratory experience	0.26	-0.01	0.20	-0.28

"*" Indicates items selected for the particular factor loading

purposes.

A look at Table 4.3 shows that 14 items are loaded substantially on the first factor. These 14 items also appeared in Factor 1 of the three-factor solution and accounted for 15.7 percent of the variance. The factor loading range from 0.35 to 0.71. Although items 18 and 50 have loadings on other factors the factor loadings were not excessively high relative to the loadings on this factor. This first factor of the 4-factor solution is similar to that discussed in the 3-factor solution and therefore has been identified as instruction. For example, Item 13 -- Participated in team teaching or Item 20 -- Guided students in the technique of role playing and simulation. This first factor is consistent with Houle's instruction typology.

A look at Table 4.3 further reveals that the second factor of the four factor solution contains 13 items and accounted for a variance of 8.4 percent. These 13 items have loaded substantially on this factor. The factor loading range from 0.31 to 0.64. Of the 13 items, all except Item 35 were also in factor 2 of the three-factor solution. This shows the high degree of stability of relationship between items on this factor. The second factor of the four-factor solution contains items that are indicative of a learning where the outcome cannot be predicted and where utilization of didactics are usually not the most effective. For example Item 26 -- Served on a Business Education Advisory Board, members are there to deliberate to make decisions; and Item 40 -- Conduct a community survey, only at the end on reflection or summation learning bcomes apparent. This second factor has been labelled inquiry and is consistent with Houle typology of Inquiry.

Table 4.3 also contains the third factor of the four factor solution of which nine items are loaded substantially on this factor. These nine items accounted for 5.7 percent of the variance. The factor loading range from 0.34 to 0.55. All the items, except Items 4, 28 and 2 were part of Factor 2 of the three-factor solution which had a blend of inquiry, and reinforcement items. An examination of the items for factor 3 of the four factor solution shows that these variables which clustered together were all positively correlated and can be interpreted as having something in common. Examples of commonality are Item 36 -- Presented a Business education related speech to peers, or faculty or community, and Item 32

-- Served as moderator for a panel discussion. This third factor of the four-factor solution is consistent with Houle's reinforcement (performance) typology and has been labelled reinforcement. Factor 3 of the four-factor solution are activities in which the business education instructor as participant is practicing and at the same time internalizing in order to provide quality service.

Table 4.3 also shows that nine items are loaded substantially on the fourth factor of the four-factor solution. These nine items range from 0.30 to 0.71. All nine items previously appeared in Factor 3 of the three-factor solution which was labelled reinforcement. However, as was noted, the labelling of factor three of the three factor solution was not fully descriptive. As a result the fourth-factor of the four-factor solution has been labelled inquiry/reinforcement. This fourth factor of the four-factor solution is unique in that it is not consistent with Houle's typology of reinforcement (performance). The activities are descriptive of activities that a business education instructor would initiate to provide quality service and, only after the activity has been performed the learning outcome is known.

The fourth factor of the four-factor solution labelled inquiry/reinforcement is different from the third factor of the four-factor solution labelled reinforcement in that the items on the third factor of the four-factor solution are reinforcement activities usually initiated by someone other than the instructor.

F. Five-Factor Solution

Table 4.4 is a matrix of the data for a five-factor solution. The five-factors include 48 of the 50 items with a cummulative variance of 39 percent. This factor contains the most items as well as the largest variance of all the factor solution. This five-factor solution was attempted to find out whether it would yield a better interpretation of the data. A look at table 3.4 shows that 14 of the items are loaded substantially on the first factor. These 14 items accounted for 15.7 percent of the variance. As well, since these items on factor one of the five-factor solution are the same as factor one of the three-factor solution and factor one of the four-factor solution, the factor has been labelled instruction.

Table 4.4

Rotated Factor Matrix
Result of Factor Analysis of the Correlation Matrix
Factor Loadings of Items by Factor 1-5

	Items	Factors				
		1	2	3	4	5
11	Counselled a business education student	0.70 *	0.24	0.06	-0.01	0.02
12	Discussed teaching strategy with a colleague	0.69*	0.01	0.09	-0.02	-0.24
5	Conducted instruction for usually slower and/or more capable students	0.69*	-0.02	-0.12	-0.04	0.02
15	Experimented with different approach to some aspects of business	0.67*	0.05	-0.05	0.06	0.13
18	Conducted group discussions	0.63*	0.30	0.14	-0.16	0.15
17	Discussed a business topic with a colleague	0.63*	0.05	0.18	0.02	-0.06
16	Reviewed and adjusted own lesson plan	0.57*	0.07	0.21	0.00	-0.14
21	Held conferences with borderline students to evaluate progress	0.53*	0.24	-0.06	-0.02	-0.12
43	Took higher education course	0.49*	0.18	0.21	0.11	0.00
13	Participated in team teaching	0.48*	0.20	-0.11	0.10	0.23
6	Assisted students engaged in programmed instruction	0.46*	-0.21	0.01	0.16	0.13
20	Guided students in the techniques of role playing and simulation	0.43*	-0.03	0.25	0.05	0.05
50	Took an interest course	0.37*	0.31	0.29	-0.09	-0.01
9	Consulted a general reference book such as an encyclopedia	0.34*	-0.12	0.15	0.12	-0.31
10	Guided students during laboratory experience	0.29	0.08	-0.28	-0.05	0.14
38	Attended a conference sponsored by a professional organization	0.09	0.62*	-0.02	0.29	0.22
26	Served on a Business Advisory Committee	-0.11	0.59*	-0.02	0.30	0.04
44	Attended business meeting of professional organization	0.14	0.56*	-0.08	0.19	0.02
47	Co-ordinated "on the job" instruction for other instructors	0.07	0.55*	0.30	-0.26	0.07
49	Conferred with another professional	-0.06	0.54*	0.22	-0.00	-0.01
41	Conferred with a curriculum specialist	0.19	0.51*	-0.03	-0.01	0.02
42	Consulted with a commercial representative	-0.18	0.50*	0.18	0.14	-0.02

Table 4.4 (Continued)

40	Conducted a community survey	0.08	0.47*	0.15	0.30	-0.19
27	Conducted student follow-upstudy	0.21	0.45*	0.15	0.30	-0.19
39	Conducted workshop for benefit of staff	0.16	0.44*	0.05	-0.22	0.2[illegible]
36	Presented a business education related speech	0.06	0.41*	0.22	0.13	0.33
35	Attended in-service education meeting	-0.00	0.39*	0.35	0.30	-0.19
32	Served as moderator on a panel discussion	0.24	0.39*	0.09	0.04	0.26
24	Rehearsed skills useful to job of business education instructor	0.26	0.35*	0.02	0.17	0.06
29	Evaluated one's own business education program	0.21	-0.01	0.73*	-0.02	-0.06
30	Consulted a psychology test	0.05	-0.29	0.66[illegible]	[illegible]	[illegible]03
25	Developed long range plans for business education program	0.19	0.11	0.58*	[illegible]	[illegible]
45	Analyzed or listened to instruction of peers	0.03	0.21	0.54*	[illegible]	[illegible]
37	Participated in non-teaching school function	-0.03	0.30	0.48*	[illegible]	-0.12
48	Visited or contacted an agency such as Canada Employment Centre	0.26	0.27	0.42*	0.00	0.04
28	Held conferences to help individual students meet personal, educational needs	0.07	0.17	0.41*	-0.07	0.33
31	Maintained liaison with members of the community	-0.05	0.09	0.36*	0.24	0.24
19	Read a business education periodical	-0.05	0.17	-0.10	0.69*	0.16
23	Prepared a teaching aid	-0.08	0.12	0.00	0.60*	0.03
46	Attended community organization meeting	-0.08	0.33	0.26	0.50*	-0.00
8	Listened to information media	0.21	0.06	0.13	0.48*	-0.01
1	Read general interest newspapers and/or periodicals maintain awareness	0.03	0.19	-0.19	0.45*	0.08
7	Consulted a teaching techniques text	0.37	-0.06	0.13	0.41*	-0.02
4	Consulted general reference book such as a dictionary	0.24	0.04	-0.01	-0.02	-0.64 *
3	Consulted a textbook, e.g. Office Procedures	0.27	0.09	0.25	-0.06	-0.57 *
34	Assisted in screening of prospective students	0.28	0.28	0.18	0.14	0.43 *
22	Read an "inspirational" book	0.20	0.04	0.11	0.35	0.42 *
2	Trained students to serve as peer instructors	0.42	-0.01	0.06	-0.05	0.42 *
14	Prepared and conducted teaching sessions outside of specialization	0.32	-0.24	0.23	-0.09	0.34 *
33	Wrote a scholarly paper on a business subject and submitted it for publication	0.18	0.24	-0.00	0.15	0.30 *

"*" Indicates items selected for the particular factor loading

A look at Table 4.4 further reveals that the second factor of the five-factor solution contains 14 items all of which are loaded substantially on the second factor. These 14 items accounted for 8.4 percent of the variance. The factor loading range from 0.39 to 0.62. A look at Factor 2 of the five-factor solution shows that all the items with the exception of Item 47 appeared in the same category of previous factors. This factor, Factor 2 of the five-factor solution is consistent with Houle's typology of inquiry and has been labelled inquiry.

An examination of Table 4.4 also reveals the third factor of the five-factor solution which contains eight of the 48 items. These eight items accounted for 5.7 percent of the variance. All eight items appeared in Factor 3 of the three-factor solution and in Factor 4 of the four-factor solution which was labelled inquiry/reinforcement as it involves activities an instructor would initiate and perform in order to provide quality service. For example, Item 31 -- Maintained liaison with a community.

A look at Table 4.3 also reveals the fourth factor of the five factor solution. This factor contains six of the 48 items and accounted for 4.6 percent of the variance. The factor loading range from 0.41 to 0.69. All the items with the exception of Item 7 appeared in Factor 2 of the three-factor solution. As well Item 7 has almost the same loading on another factor.

A look at Table 4.3 also shows the fifth factor of the five-factor solution. This factor contains seven items of the 48 items and accounted for 4.5 percent of the variance. The factor loading range from 0.30 to -0.64. This factor has many peculiarities. For example, it contains a blend of inquiry, instruction and reinforcement items; it has items of equal loading (Item 2) on other factors; Items 14, 22, 33 and 34 have substantial loading on other factor; as well the two-highest factors (Items 4 and 3) are negative.

Although the five-factor solution accounted for the highest number of items as well as the largest variance, it did not give a better interpretation of the data; it is repetitive of previous factors and contain negative items. There was no reverse items on the Business Education Instructors' Activity Survey instrument.

G. Summary of Factor Solutions

A comparison of the three-factor solution and the four-factor solution reveals that the three-factor solution accounts for 47 items and the four-factor solution accounts for 45 items. However the four-factor solution accounts for 34.5 percent of the variance as compared to 29.8 percent of the variance in the three-factor solution; a difference of 4.7 percent.

The four-factor solution improves the understanding of the three-factor solution by further defining Factor 2 of the three-factor solution into "inquiry" and "reinforcement" factors. The five factor solution did not contribute further clarification of the data regarding the modes of learning typology.

It should be noted that the five-factor solution may offer additional insights into an understanding of business education instructors continuing professional education by extending Houle's process-based typology to address content-oriented items. The relationship of process items and content items in business education instructors' continuing education would be an appropriate topic for an additional study.

While the three-factor solution offers the attractiveness of the same number of factors as Houle's typology, and the five-factor solution seems to offer additional insights with Factors 4 and 5, the researcher selected the four-factor solution. It offers the most parsimonious interpretation of the data.

H. Demographic Variables

Information about the demographic characteristics of the respondents of this study was necessary to analyze their preferences for specific types of continuing professional activities. For instance, whether or not chronological age affected the choice of the structural modes of learning hypothesized by Houle. To describe the persons responding to the instrument, factual data about such persons were needed. This study was also concerned with whether or not instructors in rural areas of the Province exhibited patterns of learning

preferences different from those in urban areas. As well, to observe what differences exist, if any, of the regions participating in continuing education; and, whether age increases or decreases the instructor's participation in continuing learning.

This study found significant relationships between the four factor solution and demographic variables because of the wide range of respondents particularly with regard to size of community. This finding is consistent with Kovalik (1986) study.

Twelve demographic items were included in the second part of the Business Education Instructor's Activity Survey. The demographic items were identified by type of institution, geographic location, size of community, number of full-time instructors, number of part-time instructors, academic qualification, identification of training program, years of teaching, present position, age and sex. Each variable will be discussed in turn.

A probability level of 0.05 was established as the minimum standard for an interpretation of the results of the correlation analysis. Further since calculations in the first section of the study were made using only data from business education instructors who were teaching for the past twelve months, the same qualifications were used in calculations of the demographic variables. Since normality of score distribution is an assumption for certain statistical procedures, scores for each demographic variable were tested for skewness. A critical value of ± 0.235 for $n=92$ $(p=0.5)$ was interpreted from tabled calculations (Goehring, H.J., Jr., 1981).

Table 4.5 contains the Skewness values for demographic variable scores. From Table 4.5 it was concluded that the distributions of scores with the exception of size of community (-0.807) exceeded the critical value and were positively skewed distributions. For these variables Spearman rho correlation coefficients were calculated to measure degree of correlation with the four modes of learning factors. The Spearman rho is the preferred procedure since as an ordinal statistic it is less affected by skewness than the Pearson coefficient. The Spearman rho was used to measure association between factor scores and size of community since the data is ordinal. However, the Pearsons correlation was used for years of teaching, full-time instructors and part-time instructors because scores were found to be

Table 4.5

Skewness Values for Demographic Variable Scores

Variable	Skewness
Identification of Instititution	
Location of Instititution	.527
Size of Community	-.807
Number of full-time instructors	.074
Number of part-time instructors	.981
Highest academic qualification	1.108
Years of teaching	.833
Present position	2.287
Age of Instructor	.889
Sex of instructor	2,375

normally distributed. Scores for only the vocational program and the secondary program route were also calculated using the Pearson correlation to find out whether there was any significance with instructors graduating from those programs and the four factor learning modes of instruction, inquiry, reinforcement, and inquiry/reinforcement.

Table 4.6 contains the Spearman rho values and levels of probability for location of institution, size of community, highest academic qualification, present position, age and sex. For example, the Spearman rho correlation coefficient is 0.393 and the probability level is 0.001 to express the relationship between size of community and Factor 1 (instruction).

Institutions

Respondents were asked to identify from a list of three the type of institution at which their professional duties were carried out. The institutions were classified as community colleges, institutes of technology and Alberta Vocational Centres (AVC's). A look at Table 4.6 indicates that the type of institution and the learning mode of instruction were significantly correlated ($p=.014$). Further that the type of institution and the learning mode of inquiry/reinforcement were significantly correlated ($p=.042$). An examination of the analysis showed that instructors at the institutes of technology were significantly different in their approach to the learning mode of inquiry/reinforcement.

Position

Respondents were asked to identify their descriptive title from a list of five categories. These categories were Instructor, Senior Instructor, Chairperson, Program Supervisor and Department Head. A look at Table 4.6 indicates that the position held and the learning mode of reinforcement were significantly correlated ($p=.016$). An examination of the analysis showed that business education instructors holding the title of Department Head approached the learning mode of reinforcement differently from instructors holding other descriptive title.

Table 4.6

Spearman Correlation Coefficients and Probability Level Between Specific Demographic Variables and factors of the 4-Factor Solution of Instruction, Inquiry, Reinforcement and Inquiry/Reinforcement

Demographic Variable	1 Instruction	2 Inquiry	3 Reinforcement	4 Inquiry/ Reinforcement
	rho/p	rho/p	rho/p	rho/p
Institution	0.232	-0.055	-0.032	0.186
	0.014	0.301	0.380	0.042
Location of Institution	-0.111	0.088	-0.099	-0.008
	0.148	0.203	0.175	0.470
Highest qualification	0.002	-0.010	0.039	-0.017
	0.489	0.462	0.355	0.437
Size of Community	-0.258	0.009	-0.113	-0.166
	0.007	0.465	0.144	0.062
Position	0.077	0.053	0.227	-0.002
	0.234	0.307	0.016	0.492
Age	-0.062	0.086	-0.163	-0.121
	0.282	0.213	0.066	0.136
Sex	0.136	0.058	0.141	-0.025
	0.103	0.293	0.095	0.409

Size of Community

. Respondents were asked to indicate from a list of six population categories the size of the community in which their organization was located. Responses to this variable gave an indication of the opportunities or environment that might influence a business education instructor to engage in continuing professional education and therefore influence the mode of learning. Five percent of respondents indicated a community of fewer than 2.495 (Group 1); 12.5 percent indicated a community of 2,500 to 9,999 (Group 2); 0.4 percent indicated a community of 25,000 to 100,000 (Group 4) and four percent indicated a community of 100,000 to 499,999 (Group 5) and 51 percent indicated a community of more than 500,000 (Group 6).

Table 4.7 contains the One-way Analysis of Variance for the size of the community and the four-factor analysis. The analysis indicates that business education instructors in communities with a population of less than 2,500 are significantly different on the learning mode of instruction. Further, that size of community is significantly and positively related with inquiry/reinforcement despite the fact that the larger communities could offer more opportunities for this type of learning. However, the Scheffe procedure indicated that business education instructors with the exception of those instructors from communities with a population size of 100,000 to 499,999 tended to prefer inquiry/reinforcement as a continuing learning education.

Table 4.8 contains one-way analysis of variance between Size of Community and Factor 1 (instruction). The analysis indicates that there is significant variation among groups and the learning mode of instruction.

Table 4.9 contains the one-way analysis of variance between size of community and Factor 2 (Inquiry). An examination of the probability score would indicate that there is no significant relationship between groups and the learning mode of Inquiry.

Table 4.10 contains the one-way analysis of variance between the size of community and Factor 3, Reinforcement. An examination of the probability score would indicate that there is no significant variation among groups and the learning mode of instruction.

Table 4.7

One-Way Analysis of Variance of Community Size Classified by the Four-Factor Solution (Factor 1 Instruction, Factor 2 Inquiry, Factor 3 Reinforcement and Factor 4 Inquiry/Reinforcement)

Factor	Size of Community	N	Mean	S.D.	F	P
		(n=89)				
1	fewer than 2,499	5	3.3	1.13	4.32	0.00
	2,500 to 9,999	11	2.8	0.87		
	10,000 to 24,999	4	2.3	0.46		
	25,000 to 99,999	20	2.1	0.45		
	100,000 to 499,999	3	3.1	0.32		
	more than 500,000	46	2.3	0.58		
		(n=90)				
2	fewer than 2,499	5	2.6	0.96	0.18	0.96
	2,500 to 9,999	11	2.6	0.46		
	10,000 to 24,999	4	2.7	0.90		
	25,000 to 99,999	20	2.5	0.73		
	100,000 to 499,999	4	2.5	0.73		
	more than 500,000	46	2.6	0.80		
		(n=89)				
3	fewer than 2,499	5	1.4	0.89	1.12	0.35
	2,500 to 9,999	11	1.5	[illegible]		
	10,000 to 24,999	4	1.3	0.58		
	25,000 to 99,999	20	1.0	0.60		
	100,000 to 499,999	3	1.9	1.89		
	more than 500,000	46	1.2	0.74		
		(n=86)				
4	fewer than 2,499	4	3.5	0.63	5.23	0.00
	2,500 to 9,999	11	3.1	0.77		
	10,000 to 24,999	4	2.8	1.07		
	25,000 to 99,999	19	2.7	0.84		
	100,000 to 499,999	3	5.1	0.49		
	more than 500,000	45	2.7	0.87		

Table 4.8

One-Way Analysis of Variance Between Size of Community and Factor 1 (Instruction)

Source	df	Sum of Squares	Mean Squares	F-ratio	P
Between groups	5	8.5182	1.7036	4.3275	0.00
Within groups	83	32.6751	0,3937		
Total	88	41.1933			

Table 4.9

One-Way Analysis of Variance Between Size of Community and Factor 2 (Inquiry)

Source	df	Sum of Squares	Mean Squares	F-ratio	P
Between groups	5	0.5299	0.1060	0.1846	0.96
Within groups	84	48.2214	0.5741		
Total	89	48.7512			

Table 4.10

One-Way Analysis of Variance Between Size of Community and Factor 3 (Reinforcement)

Source	df	Sum of Squares	Mean Squares	F-ratio	P
Between groups	5	3.1283	0.6257	1.1231	0.35
Within groups	83	46.2392	0.5571		
Total	86	49.3675			

Table 4.11

One-Way Analysis of Variance Between Size of Community and Factor 4 (Inquiry/Reinforcement

Source	df	Sum of Squares	Mean Squares	F-ratio	P
Between groups	5	18.8940	3,7788	5,2319	0.00
Within groups	80	57.7811	0,7233		
Total	85	76.6751			

Table 4.11 contains the one-way analysis of variance between the size of the community and Factor 4 (inquiry/reinforcement). There is significant variation among groups and within groups and this learning mode of inquiry/reinforcement. This is not surprising as small communities would be at a disadvantage in accessing resources when compared with groups in large urban communities.

Table 4.12 is the Pearson correlation for demographic variables, years teaching, full-time, and part-time instructors. As well Pearson correlation was calculated for only two of the program variables, Vocational business education route and Secondary Business Education.

Location of Institution

Respondents were asked to indicate from a list of four the geographic location of their institution. The four locations were classified as Northern Alberta, Edmonton including Red Deer and Stony Plain, Calgary, and Southern Alberta. This variable was necessary as location of Institution may have an effect on the learning mode.

Table 4.13 contains the one-way analysis conducted to determine whether any significant difference existed between the location of the institutions and the four factors. No significant difference was found between the location and the learning modes of instruction, inquiry, reinforcement, and inquiry/reinforcement.

Chronological Age

Table 4.14 contains the one-way analysis of variance conducted to determine any significant difference between the age of the respondents (n=92) and the four-factor solution. The age range from 20 to 60 and over, and were divided into five categories, each containing intervals of ten years, for example, Category 1 (20 - 29), Category 2 (30 - 39), Category 3 (40 - 49), and Category 5 (60 years and over). These categories were selected from inspection of demographic sections of some previous research. Age was significantly correlated to Factor 1 - Instruction. Age was borderline on the significance level with Factor

Table 4.12

Pearson Correlation Coefficients and Probability Level Between Specific Demographic Variables and factors of the 4-Factor Solution of Instruction, Inquiry Reinforcement and Inquiry/Reinforcement

Demographic Variable	Factors							
	1 Instruction		2 Inquiry		3 Reinforcement		4 Inquiry/ Reinforcement	
	Co/p		Co/p		Co/p		Co/p	
Years Teaching	0.057	0.300	0.186	0.043	0.061	0.287	-0.127	0.127
Number of full time instructors	-0.000	0.497	-0.057	0.293	-0.164	0.061	-0.143	0.092
Number of part time instructors	-0.125	0.171	-0.003	0.488	-0.238	0.033	-0.064	0.316
Vocational	0.287	0.003	-0.096	0.182	0.138	0.097	-0.0066	0.477
Secondary	-0.044	0.339	0.092	0.193	0.141	0.094	0.085	0.217

Table 4.13

One-Way Analysis of Variance of Geographic Location Classified by the Four-Factor Solution (Factor 1 Instruction, Factor 2 Inquiry, Factor 3 Reinforcement and Factor 4 Inquiry/Reinforcement)

Factor	Location	N	Mean	S.D.	F	P
		(n=90)				
1	Northern Alberta	25	2.6	0.81	0.78	0.50
	Greater Edmonton	32	2.3	0.67		
	Calgary	22	2.4	0.58		
	Southern Alberta	11	2.3	0.52		
		(n=91)				
2	Northern Alberta	25	2.5	0.59	0.57	0.63
	Greater Edmonton	33	2.6	0.82		
	Calgary	22	2.5	0.61		
	Southern Alberta	11	2.8	1.03		
		(n=90)				
3	Northern Alberta	25	1.3	0.76	0.44	0.72
	Greater Edmonton	32	1.2	0.85		
	Calgary	22	1.1	0.59		
	Southern Alberta	11	1.2	0.71		
		(n=87)				
4	Northern Alberta	24	3.1	0.70	0.75	0.52
	Greater Edmonton	30	2.7	1.10		
	Calgary	22	2.9	1.01		
	Southern Alberta	11	3.1	0.98		

Table 4.14

One-Way Analysis of Variance of Chronological Age Classified by the Four-Factor Solution (Factor 1 Instruction, Factor 2 Inquiry, Factor 3 Reinforcement and Factor 4 Inquiry/Reinforcement)

Factor	Chronological Age	N	Mean	S.D.	F	P
		(n=87)				
1	20 - 29	1	2.1		4.32	0.00
	30 - 39	39	2.4	0.68		
	40 - 49	32	2.6	0.74		
	50 - 59	10	2.3	0.62		
	60 and over	5	2.2	0.40		
2	20 - 29	1	2.1		2.46	0.05
	30 - 39	39	2.5	0.65		
	40 - 49	32	2.7	0.75		
	50 - 59	10	3.1	1.00		
	60 and over	5	2.0	0.20		
		(n=87)				
3	20 - 29	1	2.0		0.89	0.46
	30 - 39	39	1.3	0.83		
	40 - 49	32	1.2	0.70		
	50 - 59	10	1.2	0.67		
	60 and over	6	0.7	0.36		
		(n=84)				
4	20 - 29	1	2.2		1.42	0.23
	30 - 39	37	3.0	0.92		
	40 - 49	31	2.9	0.97		
	50 - 59	10	3.1	1.07		
	60 and over	5	2.0	0.41		

2 - inquiry.

Highest Academic Qualification

Respondents were asked to check highest academic qualification from categories ranging from a diploma to the doctoral level as well as an open ended category, Other (Specify). The categories were Diploma (Group 1), Bachelor's degree (Group 2), Masters in education degree (Group 3), Bachelor of Science (Group 4), Master of Science (Group 5). Doctorate (Group 6), Other (Specify) (Group 7).

Table 4.15 contains the one-way analysis of variance for highest academic qualifications classified by the four factors of instruction, inquiry, reinforcement, and inquiry/reinforcement. The analysis did not indicate any significant difference between highest academic qualifications and the four factor solution of Instruction, Inquiry, Reinforcement, and Inquiry/Reinforcement.

Vocational Business Education Program – Secondary Business Education Program

Table 4.16 contains the results of the Pearson product moment correlation coefficient which was used to measure the degree of relationship among respondents who completed their undergraduate degree through the Vocational Business Program and the four factor solution of instruction, inquiry, reinforcement and inquiry/reinforcement; and the Secondary Business Education Program and the four factor solution of instruction, inquiry, reinforcement and inquiry/reinforcement. The vocational program was significantly related with Factor 1 Instruction. This is not surprising as instructors going through the vocational program have had years of experience in their chosen career. The analysis did not indicate any significant relaionship between the secondary program and any of the factors.

Years of Teaching

Table 4.17 contains the results of the Pearson product moment correlation coefficient between years of teaching and the four factors of instruction, inquiry, reinforcement and

Table 4.15

One-Way Analysis of Variance of Highest Academic Qualification by the Four-Factor Solution (Factor 1 Instruction, Factor 2 Inquiry, Factor 3 Reinforcement and Factor 4 Inquiry/Reinforcement)

Factor	Academic Qualification	N	Mean	S.D.	F	P.
		(n=90)				
1	Group 1	16	2.4	0.80	0.02	0.99
	Group 2	41	2.4	0.65		
	Group 3	12	2.4	0.70		
	Group 4	1	2.4	0.62		
	Group 5	4	2.5	0.42		
	Group 7	16	2.4	0.76		
		(n=91)				
2	Group 1	16	2.5	0.83	1.32	0.26
	Group 2	41	2.6	0.75		
	Group 3	12	2.8	0.62		
	Group 4	2	2.7	0.06		
	Group 5	4	3.3	0.20		
	Group 7	16	2.4	0.77		
		(n=90)				
3	Group 1	36	1.1	0.75	0.22	0.95
	Group 2	41	1.2	0.67		
	Group 3	12	1.2	1.10		
	Group 4	1	1.6			
	Group 5	4	1.5	0.45		
	Group 7	16	1.2	0.74		
		(n=87)				
4	Group 1	15	2.9	1.07	0.18	0.96
	Group 2	40	3.0	0.93		
	Group 3	12	2.7	1.04		
	Group 4	1	2.7			
	Group 5	4	3.0	0.27		
	Group 7	15	2.9	1.10		

Table 4.16

Pearson Coefficient of Correlation Between the Independent Variables Vocational Business Education Program and Secondary Business Education Program and the Dependent Variable of Factor 1 Instruction, Factor 2 Inquiry, Factor 3 Reinforcement and Factor 4 Inquiry/Reinforcement

	Factors			
	1	2	3	4
Vocational	r=0.28 (90) p=0.00	r=-0.09 (91) p=0.18	r=0.13 (90) p=0.09	r=-0.00 (87) p=0.47
Secondary	r=-0.04 (89) p=0.33	r=0.09 (90) p=0.19	r=0.14 (89) p=0.09	r=-0.08 (86) p=0.21

inquiry/reinforcement. A look at Table 4.17 reveals that there is a significant relationship between years of teaching and Factor 2 (inquiry).

Number of full-time Instructors

There was conflict in the figures received within institutions as to the component of full-time and part-time instructors. For example, some would report two full and five part-time and others would report seven full time and zero part-time; in another instance part-time was indicated as 200. The reason for the conflict in reporting has been verified as change of status, in which many instructors switched from a full-time to a term position and many are uncertain of staff complement. Term positions are contracts renewable every year on a continuum. The range for full time instructors was from one to ten. However, the author suspects that areas reporting one full time instructor is located in an outreach station and is a subset of a larger institution.

Table 4.17

Pearson Coefficient of Correlation Between the Independent Variable Years of Teaching and the Dependent Variables of Factor 1 Instruction, Factor 2 Inquiry, Factor 3 Reinforcement and Factor 4 Inquiry/Reinforcement

	Factors			
	1	2	3	4
Years	r=0.05 (85) p=0.30	r=-0.18 (86) p=0.04	r=0.06 (85) p=0.28	r=-0.12 (82) p=0.12

Number of Part-Time Instructors

Again, no conclusive evidence could be drawn from the data because of the discrepancies in reporting. The range for part-time instructors was from zero to seven excluding the 200.

Table 4.18 contains data for respondents who indicated that they had completed their undergraduate degree at one of the universities located in the Province of Alberta. The number of respondents who have completed their undergraduate degree outside of Alberta were 16.3 percent. Some of these institutions from which degrees are held were:

Memorial University

St. Francis Xavier

Mount St. Vincent

Waterloo

Southern Illinois

Montana

Victoria

British Columbia

Arizona

Saskatchewan

London (England)

New Brunswick

Manitoba

Table 4.19 contains data for respondents who indicated that they held other degrees. One respondent is half-way into a doctoral program. Three are at the mid point of a Masters degree. One respondent has completed the CGA (Certified General Accountant); two have completed and one is at the fourth level of the CMA (Certified Management Accountant); and five hold a College Diploma. More females (88.76 percent) than males (11.24 percent) were included among the respondents.

Table 4.18

Business Education Instructors who Completed Undergraduate Degree in the Province of Alberta

Program	Respondents (n=92)	Percent
Vocational Business Education University of Alberta	26	28.3
Secondary Business Education University of Alberta	12	13.0
University of Calgary	5	5.4
University of Lethbridge	4	4.4
Other	45	48.9
TOTAL	92	100

Table 4.19

Other University Degrees Held by Business Education Instructors

Other Degrees	Respondents (n=92)	Percent
Graduate Diplomas	10	10.9
Bachelor of Commerce	4	4.3
Bachelor of Science	3	3.3
Masters of Education	9	9.8
Master of Science	4	4.3

I. Summary

In this chapter, the researcher presented data from the principal component analysis with an oblique rotation method to identify basic factors underlying the 50 activity variables.

Data were presented from three-, four-, and five-factor solutions. The researcher selected the four-factor solution as the one best representing the data. Factors were identified as "instruction", "inquiry", "reinforcement", and "inquiry/reinforcement." Significant differences were found between Factor 1 (instruction) and communities with fewer than 2,499, and 25,000 to 99,999; as well significant differences were found between Factor 4 (inquiry/reinforcement) and all communities. The four factor solution were used to analyze possible relationship between instruction, inquiry, reinforcement and inquiry/reinforcement and business education instructors whose initial degree was either the vocational business education program or the secondary business education program. Significant relationships were found between Factor 1 (instruction) and instructors who graduated from the vocational business education program. No significant relationships was found between the learning modes and the secondary business education program.

The next chapter, Chapter V contains the conclusion of the study. The research questions are discussed. The implications for business education instructors continuing education, and recommendations for further research are presented.

Chapter V

SUMMARY AND RECOMMENDATIONS

A. Introduction

The findings of this research were presented in the previous chapter. In this chapter, the research is summarized. Comparison of the results of the present study with the modes of learning typology as hypothesized by Houle is made. Further the results of the present study are compared with the study of Cervero and Dimmock (1985), and the results of Kovalik (1986). The final section contains implications for theory, research and practice.

B. Nature of the Study

The purpose of this study was to investigate the extent to which Houle's framework provide an accurate conceptual description of systematic structural forms of continuing professional education for business education instructors. The study was limited to business education instructors in non-university postsecondary institutions administered or sponsored by the Province of Alberta.

C. Instrumentation and Methodology

Data were collected via a 50 item questionnaire developed for the study. The instrument, Business Education Instructors' Activity Survey, sought information pertaining to activities professional business education instructors engage in while making preparations for and carrying out their duties, and characteristics of respondents. All items were designed to elicit answers by either a check-off or a short write-in response.

The questionnaire was pilot tested using five business education instructors. After revision it was distributed to 129 business education instructors. A total of 98 returns were received of which 92 were usable for statistical analysis. Statistical techniques used to analyze the data were Factor analysis, One-Way Analysis of Variance and Correlation Coefficients.

D. Comparison of findings with Houle's Typology

Problem: To what extent does Houle's framework provide an accurate conceptual description of systematic structural forms of continuing professional education for business education instructors?

Houle's framework provides a beginning of a conceptual description of systematic structural forms for the understanding of continuing professional education of business education instructors. In this study the researcher identified similarities and differences with Houle's typology. The researcher found four factors rather than three that best described the data.

Research Question 1. Does Houle's major typology of inquiry, instruction, and reinforcement (performance) provide a useful framework for understanding the continuing professional education activities of business education instructors?

The researcher identified the learning mode of instruction, inquiry and reinforcement which were also identified in Houle's framework. However, the researcher found an additional learning mode which is inquiry/reinforcement. Therefore Houle's framework of inquiry, instruction and reinforcement needs refinement.

Research Question 2. Are the professional education activities of business education instructors explained by other single or multiple-factor solutions that may suggest other modes of variations of learning not hypothesized by Houle?

The researcher selected a four factor-solution that best described the continuing professional education activities of business education instructors. They were identified and labelled as:

a. Instruction

b. Inquiry

c. Reinforcement

d. Inquiry/Reinforcement

Learning mode of instruction for both the present study and for Houle are similar and therefore no refinement is suggested. Learning mode of inquiry for both the present study and Houle are similar and therefore no refinement is suggested. Learning mode of reinforcement for both the present study and Houle are similar and therefore no refinement is suggested.

However, the learning mode of inquiry/reinforcement discovered in the present study is unique in that there is no such mode hypothesized by Houle in his typology of learning modes. This inquiry/reinforcement learning mode, which is a combination of two modes, found in the present study indicates that Houle's major modes of learning need to be refined if they are to be useful in understanding and describing the ways in which business education instructors engage in continuing professional education.

This fourth learning mode has been correctly identified and labelled inquiry/reinforcement and is in keeping with how that professional group acquire learning given the environment. This mode, inquiry/reinforcement is totally different from the mode labelled inquiry and the mode labelled reinforcement, as well as it is unique to Houle's hypothesized typology and would suggest some refinement to Houle's typology.

Houle's three major modes of learning - inquiry, instruction and reinforcement - with refinements are, therefore, useful in describing and understanding the ways in which business education instructors engage in professional continuing education. The researcher is satisfied that a satisfactory response has been reached for the initial research question, and research questions one and two.

Even though Houle's typology was accepted to describe fundamental business education instructors continuing professional education modes, the results of the investigation identified an additional feature surrounding the modes that is not adequately identified in Houle's typology. One of the modes identified in the present study (Mode 4) have reinforcement and inquiry orientation and have been properly labelled "inquiry/reinforcement." Although, Houle did not include this refinement as part of his hypothesis; other researchers identified refinements to his typology. Cervero and Dimmock (1985) first identified and labelled a self-instruction and a group-instruction in their study. Kovalik (1986) the next researcher to test Houle's typology also distinguished refinements of self-inquiry and inquiry/reinforcement. Kovalik's refinements differed with Cervero and Dimmock only as to which mode was affected because of the professional group he investigated.

Based on the studies of Cervero and Dimmock (1985), Kovalik (1986), and the present study, it seems that additional refinements are necessary to Houle's typology for it to more fully describe continuing professional education activities. Comparing the results of the present study with the results of the Cervero and Dimmock (1985) study, and Kovalik (1986) it is possible to identify similarities and differences which reveal basic elements about each professional group and the way CPE is conducted.

First, an instruction mode emerged from each group. For business education instructors, the instruction mode was not sub-divided. Kovalik (1986) labelled this mode self-instruction. However, Cervero and Dimmock (1987) identified subsets of the modes of instruction and labelled them as self-instruction and group-instruction.

Second, the present researcher identified an inquiry mode for business education instructors. This mode of inquiry was also found by researcher Cervero and Dimmock and labelled inquiry. The other researcher Kovalik also found this mode of inquiry but labelled as the self-inquiry which was more in keeping with the environment in which pastors pursued this type of continuing learning.

Third, the present study identified a reinforcement mode. This mode was also identified by Cervero and Dimmock as well as Kovalik and labelled reinforcement. The finding and labelling of this mode by all three researchers, indicates that all three groups - nurses, pastors and business education instructors - are "practicing" professionals, actively engaged in their chosen vocation and each group utilizes reinforcement as a major learning mode.

Fourth, business education instructors identified a mode which is unique to this group of practising professional. This unique mode was labelled inquiry/reinforcement. This inquiry/reinforcement mode indicates instructors are constantly seeking information to establish guidelines so that they become a fundamental part about the way instructors think or channel their action to provide quality service. It is not unusual to find the mode of inquiry/reinforcement different for business education instructors given the nature of this occupation in a rapid technological changing environment.

The similarities and differences in the mode configuration among business education instructors, nurses, and pastors are indicative of the essential natures of the three professionalizing groups and how they engage in CPE.

Research Question Number 3. What relationships exist between the modes of learning and demographic variables such as size of the business education institution and the size of the community from which the sample is drawn, and the chronological age, years of teaching experience and qualification of business education instructors.

The present study found that size of community was positively related with the learning mode of instruction. Years of teaching had a significant relationship with the mode of inquiry. The study did not find any significant difference between chronological age, qualification of business education instructors and any of the learning modes of instruction, inquiry, reinforcement, and inquiry/reinforcement.

E. Implications of the Study

While the present study is only the third professional group to test Houle's typology, the study of business education instructors has furthered research efforts and identified some implications. These implications will be discussed under three headings: first, the implications for Houle's typology in describing the way professionals learn; second for future research and third for future practice of business education instructors.

F. Theory

1. The present study contributes to the theoretical base of continuing professional education and provides additional understanding of the modes of learning.
2. The area of change theory which offers some choice opportunities for association with modes of learning.
3. Studies on three vocational groups have extended Houle's hypothesis and suggested refinements others must follow to improve current understanding and further contribute to the development of continuing professional education.

G. Practice

1. The results of the study may be applied to the development of business education instructors continuing professional education. Several groups could benefit from a consideration of the study; (a) those who are responsible for developing continuing education programs for business education instructors such as educators at institutions of higher learning; (b) administrators planning professional development activities; and (c) planners at the professional organization.
2. The additional mode of inquiry/reinforcement that surfaced would provide direction for program development.
3. Students now entering the professions could benefit, in that educators can now utilize the categorization of the modes to plan pre-service education for business education instructors, even though the impetus of the study was for continuing education of the professionals.
4. A study should be conducted to find out the effect of the type and length of pre-service training on the modes of learning used in CPE.

H. Future Research

In this section the researcher suggests several types of studies which should be conducted to give further insight to the development and usefulness of a typology of continuing professional education. These are:

1. The study provides an established format for the development of item and instrument construction. The model provided by this study will serve as a guide to others in future testing and refinement of the modes of learning typology.
2. There is the need to conduct studies among different occupational groups. The three groups studied have indicated the basic usefulness of Houle's typology. Additional investigation of other groups is needed for further clarification and refinement.
3. Studies should be conducted with a variety of administrative types of occupations and

technically oriented groups to identify basic similarities or differences.

4. Additional work needs to be done to further develop the modes of inquiry, instruction, and reinforcement. More effort needs to be applied to develop ways of identifying the characteristics of each mode.
5. It would be interesting to explore the relationships between modes of learning and learning styles. It is possible there are linkages between inquiry, instruction, and reinforcement modes and self-directed, collaborative, and institutional styles (Smith, 1982) that warrant further investigation. In addition, other research could explore the relationship between learning modes and other "styles" including personality and management.
6. Additional work could be done with a larger population; for example, with business education instructors across Canada.
7. Replication of the study should be done by repeating the study with the same population in two consecutive years.
8. It will be important to explore the potential relationship between the process-oriented factors and content-oriented factors that surfaced in the study.

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APPENDIX A

Business Education Instructors' Revised Activity Items

BUSINESS EDUCATION INSTRUCTORS' REVISED ACTIVITY ITEMS

	PROGRAM PLANNING DEV. AND EVALUATION	INSTRUCTIONAL PLANNING	INSTRUCTIONAL EXECUTION	INSTRUCTIONAL EVALUATION	INSTRUCTIONAL MANAGEMENT	GUIDANCE	SCHOOL COMMUNITY RELATIONS	STUDENT VOCATIONAL ORGANIZATION	PROFESSIONAL ROLE AND DEVELOPMENT	COORDINATION
agency such as Canada Employment Centre to become familiar with services offered								X		
94. Conferred with another professional e.g., attorney, counsellor, accountant									X	
95. Consulted a teaching techniques text		X								
96. Presented the findings of a community survey	X									
97. Assessed students basic skills on entrance to program	X									
98. Served as advisor to students						X		X		
99. Analyzed data collected from a needs assessment survey	X									
100. Compiled a list of competencies for business education program			X							
101. Listened to information media									X	
102. Took an interest course									X	
103. Consulted a general reference book such as an encyclopedia		X								
104. Guided students in individualized study		X								
105. Collected student data through personal interviews				X						
106. Conducted instruction with the aid of bulletin board and exhibits		X								
107. Read an inspirational book								X		
108. Summarized a lesson		X								

BUSINESS EDUCATION INSTRUCTORS' REVISED ACTIVITY ITEMS	PROGRAM PLANNING DEV. AND EVALUATION	INSTRUCTIONAL PLANNING	INSTRUCTIONAL EXECUTION	INSTRUCTIONAL EVALUATION	INSTRUCTIONAL MANAGEMENT	GUIDANCE	SCHOOL COMMUNITY RELATIONS	STUDENT VOCATIONAL ORGANIZATION	PROFESSIONAL ROLE AND DEVELOPMENT	COORDINATION
79. Co-ordinated "on the job" instructions for instructors										X
80. Planned units of instruction for calendar year		X								
81. Developed a business education lesson plan		X								
82. Assisted students in organizing a social club								X		
83. Rehearsed skills useful to job				X						
84. Demonstrated a technique such as time management			X							
85. Assisted students engaged inprogrammed instruction						X				
86. Taught students the importance of self-discipline						X				
87. Presented information with audio-visual materials such as video, tapes and films			X							
88. Used modeling and manipulative materials to present instructions			X							
89. Took a higher education course									X	
90. Attended business meeting of professional organization									X	
91. Analyzed or listened to instructions of peers										X
92. Attended community organization meeting							X			
93. Visited or contacted an										

BUSINESS EDUCATION INSTRUCTORS' REVISED ACTIVITY ITEMS

	PROGRAM PLANNING DEV. AND EVALUATION	INSTRUCTIONAL PLANNING	INSTRUCTIONAL EXECUTION	INSTRUCTIONAL EVALUATION	INSTRUCTIONAL MANAGEMENT	GUIDANCE	SCHOOL COMMUNITY RELATIONS	STUDENT VOCATIONAL ORGANIZATION	PROFESSIONAL ROLE AND DEVELOPMENT	COORDINATION
67. Consulted with a commercial representative such as publisher or salesperson regarding selection of materials/equipment for classroom/program	x									
68. Developed training agreements/ plans for placing students on the job	x									
69. Developed a course of studies for business ed.	x									
70. Directed students in applying problem solving techniques						x				
71. Presented a lesson to business education students			x							
72. Evaluated one's own business education program	x									
73. Prepared a brochure or news-release to promote program										x
74. Conducted instruction for slower and/or more capable students			x							
75. Lectured to a class of business education students			x							
76. Prepared a teaching aid such as overhead transparency or an audio or video cassette		x								
77. Demonstrated a concept or principle such as effective letter writing			x							
78. Arranged for the purchasing of business ed. supplies									x	

BUSINESS EDUCATION INSTRUCTORS' REVISED ACTIVITY ITEMS

	PROGRAM PLANNING DEV. AND EVALUATION	INSTRUCTIONAL PLANNING	INSTRUCTIONAL EXECUTION	INSTRUCTIONAL EVALUATION	INSTRUCTIONAL MANAGEMENT	GUIDANCE	SCHOOL COMMUNITY RELATIONS	STUDENT VOCATIONAL ORGANIZATION	PROFESSIONAL ROLE AND DEVELOPMENT	COORDINATION
54. Developed business education program goals and objectives	x									
55. Wrote-up minutes of department meetings										x
56. Promoted the use of the library								x		
57. Conducted workshops for the benefit of staff on such topics as wordprocessing and database management										x
58. Guided students in the techniques of role playing and simulation						x				
59. Distributed books, supplies, and equipment to students					x					
60. Took inventory of school property at the end of the year					x					
61. Applied reinforcement techniques					x	x				
62. Guided students during laboratory experience			x							
63. Taught students oral questionning techniques			x							
64. Held conference with students to evaluate progress				x						
65. Conducted a community survey	x									
66. Conferred with a curriculum specialist		x								

BUSINESS EDUCATION INSTRUCTORS' REVISED ACTIVITY ITEMS	PROGRAM PLANNING DEV. AND EVALUATION	INSTRUCTIONAL PLANNING	INSTRUCTIONAL EXECUTION	INSTRUCTIONAL EVALUATION	INSTRUCTIONAL MANAGEMENT	GUIDANCE	SCHOOL COMMUNITY RELATIONS	STUDENT VOCATIONAL ORGANIZATION	PROFESSIONAL ROLE AND DEVELOPMENT	COORDINATION
42. Read general interest newspapers and periodicals to maintain awareness of current trends in business education									X	
43. Read a business education periodical									X	
44. Organized a business education laboratory										X
45. Assisted in establishing policies for managing student attendance, transfers and terminations					X					
46. Interviewed students to determine their needs and interests		X								
47. Conducted conferences to help individual students meet personal, educational and vocational needs						X	X			
48. Trained students to serve as peer instructors			X							
49. Directed student study					X					
50. Planned timetable with department head and other instructors	X									
51. Prepared course outline for business education program	X									
52. Participated in non-teaching school function						X				
53. Attended a conference sponsored by a professional organization such as, Alberta Business Education Association, CABET or NBEA								X		

BUSINESS EDUCATION INSTRUCTORS' REVISED ACTIVITY ITEMS	PROGRAM PLANNING DEV. AND EVALUATION	INSTRUCTIONAL PLANNING	INSTRUCTIONAL EVALUATION	INSTRUCTIONAL EXECUTION	INSTRUCTIONAL MANAGEMENT	GUIDANCE	SCHOOL COMMUNITY RELATIONS	STUDENT VOCATIONAL ORGANIZATION	PROFESSIONAL ROLE AND DEVELOPMENT	COORDINATION
28. Consulted a general reference book such as a dictionary		x								
29. Administered a test to assess students cognitive performance				x						
30. Administered a test to assess students psychomotor performance				x						
31. Conducted group discussions			x							
32. Served as moderator for a panel disscussion			x							
33. Provided reference check for student						x				
34. Determined students' grades in a business education subject				x	x					
35. Consulted a psychology text						x				
36. Wrote a scholarly paper on a business subject and submitted it for publication									x	
37. Arranged for safety checks of laboratory					x					
38. Managed equipment and supplies in the laboratory										x
39. Presented a business education related speech to peers, or faculty or community									x	
40. Assisted in the screening of prospective students					x					
41. Attended in-service education meeting									x	

BUSINESS EDUCATION INSTRUCTORS' REVISED ACTIVITY ITEMS

	PROGRAM PLANNING DEV. AND EVALUATION	INSTRUCTIONAL PLANNING	INSTRUCTIONAL EXECUTION	INSTRUCTIONAL EVALUATION	INSTRUCTIONAL MANAGEMENT	GUIDANCE	SCHOOL COMMUNITY RELATIONS	STUDENT VOCATIONAL ORGANIZATION	PROFESSIONAL ROLE AND DEVELOPMENT	COORDINATION
14. Conducted an employer/ employee appreciation event							x			
15. Used appropriate student data-collection source and techniques		x								
16. Prepared students for leadership roles in business education program								x		
17. Experimented with different approach to some aspect of my work					x					
18. Supervised practicum students						x				
19. Maintained liaison with members of the community							x			
20. Served on a decision making committee, e.g. curriculum, academic, marks	x									
21. Participated in Open House							x	x		
22. Demonstrated a manipulative skill such as keyboarding/ typewriting		x								
23. Cooperated in conducting a group field trip									x	
24. Counselled a business education student					x					
25. Reviewed and adjusted own lesson plan			x							
26. Discussed a business education topic with a colleague	x									
27. Consulted a textbook e.g. Office Procedures	x	x								

BUSINESS EDUCATION INSTRUCTORS' REVISED ACTIVITY ITEMS

	PROGRAM PLANNING DEV. AND EVALUATION	INSTRUCTIONAL PLANNING	INSTRUCTIONAL EXECUTION	INSTRUCTIONAL EVALUATION	INSTRUCTIONAL MANAGEMENT	GUIDANCE	SCHOOL COMMUNITY RELATIONS	STUDENT VOCATIONAL ORGANIZATION	PROFESSIONAL ROLE AND DEVELOPMENT	COORDINATION
1. Conducted a needs assessment survey, e.g. equipment or facilities, or new program.	x									
2. Organized a workshop on career opportunities for business education students.										x
3. Discussed teaching strategies with colleague.									x	
4. Conducted an occupational analysis.					x					
5. Established criteria for student performance in a business program.	x									
6. Participated in team teaching		x								
7. Developed long range plans for business ed. program	x									
8. Served on a Business Education Advisory Committee	x									
9. Assisted students in job search						x				
10. Prepared budget estimates for departmental program.	x									
11. Conducted a student follow-up study	x									
12. Maintained a filing system				x						
13. Prepared and conducted teaching session for class outside of business education specialization.			x							x

APPENDIX B

Sorting Activity Cards Letter

Dear (Name)

Thank you for agreeing to participate in this phase of developing an instrument to measure the type of activities business education instructors engage in while preparing for and performing their duties.

The 108 activity cards for sorting are enclosed. Also enclosed are two rubber bands and two envelopes. One envelope has the definition of educative and the other the definition of non-educative for easy reference. To further assist you in sorting the cards into educative and non-educative bundles:

1. Sit at a place, such as a table or desk, where it is convenient for you to have both instruction envelopes in front of you so that you can easily read the instructions.

2. Proceed to read the statement on each of the white cards.

   After careful reading, place each white card under the appropriate envelope - the one which in your judgment the statement on the white card properly belongs.

3. When you have completed you will have two bundles of cards. Place an elastic band on each bundle separately.

4. Have your secretary call me when you are finished and I will collect the package.

Thanks for your co-operation.

Sincerely

Nina Powlette
Graduate Student

Encl.

APPENDIX C

Selection of Educative Items by Judges

SELECTION OF EDUCATIVE ITEMS BY JUDGES

Item No.	Revised Activity Items	Educative
1	Conducted a needs assessment survey, e. g. equipment, or facilities, or new program.	5
2	Organized a workshop on career opportunities for business education students.	-
3	Discussed teaching strategies with colleague.	1 2 3 4 5
4	Conducted an occupational analysis.	1 4
5	Established criteria for student performance in a business program.	-
6	Participated in team teaching.	1 2 3 4 5
7	Developed long range plans for business education program.	1 2 3 4
8	Served on Business Education Advisory Committee.	1 2 3 4 5
9	Assisted students in job search.	-
10	Prepared budget estimates for departmental program.	3 5
11	Conducted a student follow-up study.	1 2 3 4 5
12	Maintained a filing system	2 5
13	Prepared and conducted teaching sessions for class outside of business education specialization	1 2 3 4 5

Item No.	Revised Activity Items	Educative
14	Conducted an employer/employee appreciation event.	5
15	Used appropriate student data-collection sources and techniques.	2 3
16	Prepared students for leadership roles in business education program	-
17	Experimented with different approach to some aspect of business education	1 2 3 4 5
18	Supervised practicum students.	1 3
19	Maintained liaison with members of the community.	1 2 3 4
20	Served on a decision making committee e.g. curriculum, academic, marks.	-
21	Participated in Open House.	1 3
22	Demonstrated a manipulative skill such as keyboarding/typewriting	-
23	Co-operated in conducting a group field trip.	1 5
24	Counseled a business education student	1 3 4
25	Reviewed and adjusted own lesson plan.	1 2 3 4 5
26	Discussed a business education topic with a colleague	1 2 3 4 5
27	Consulted a textbook e.g. Office Procedures	1 2 3 4 5
28	Consulted a general reference book such as a dictionary.	1 2 3 4 5
29	Administered a test to assess students cognitive performance.	-

Item No.	Revised Activity Items	Educative
30	Administered a test to assess students psychomotor performance.	-
31	Conducted group discussions.	2 3 4
32	Served as moderator for a panel discussion.	2 3 4
33	Provided reference check for student.	-
34	Determined students' grades in a business education subject.	2
35	Consulted a psychology text.	1 2 4 5
36	Wrote a scholarly paper on a business subject and submitted it for publication.	1 2 3 4
37	Arranged for safety checks of laboratory	-
38	Managed equipment and supplies in the laboratory.	-
39	Presented a business education related speech to peers, or faculty or community.	3 4
40	Assisted in the screening of prospective students.	1 2 3 4
41	Attended in-service education meeting	1 2 3 4 5
42	Read general interest newspapers and or periodicals to maintain awareness of current trends in business education	1 2 3 4 5
43	Read a business education periodical	1 2 3 4 5
44	Organized a business education laboratory	1 2 3 4 5

Item No.	Revised Activity Items	Educative
45	Assisted in establishing policies for managing student attendance, transfers and terminations	-
46	Interviewed students to determine their needs and interests.	1
47	Held conference to help individual students meet personal, educational and vocational needs.	1 3 4
48	Trained students to serve as peer instructors	1 3 4
49	Directed student study	-
50	Planned timetable with department head and other instructors.	-
51	Prepared course outline for business education program.	5
52	Participated in non-teaching school function	1 2 3 5
53	Attended a conference sponsored by professional organization such as, Alberta Business Education Association, Business Education Council, CABET nor NBEA.	1 2 3 4 5
54	Developed business education program goals and objectives.	1 5
55	Wrote-up minutes of department meetings.	-
56	Promoted the use of the library.	-
57	Conducted workshops for the benefit of staff on such topics as word-processing and database management.	1 3 4
58	Guided students in the techniques of role playing and simulation.	1 3 4

Item No.	Revised Activity Items	Educative
59	Distributed books, supplies, and equipment to students.	-
60	Took inventory of school property at the end of the year.	2 3
61	Applied reinforcement techniques.	5
62	Guided students during laboratory experiences.	1 3 4
63	Taught students oral questioning techniques.	-
64	Held conference with students to evaluate progress.	1 2 3 4
65	Conducted a community survey.	1 2 3 4
66	Conferred with a curriculum specialist.	1 2 3 4 5
67	Consulted with a commercial representative such as publisher or salesperson regarding selection of materials/ equipment for classroom/program.	1 2 3 4 5
68	Developed training agreements/ training plans for placing students on the job.	4
69	Developed a course of studies for business education.	5
70	Directed students in applying problem solving techniques.	-
71	Presented a lesson to business education students.	-
72	Evaluated one's own business education program.	1 3 4 5
73	Prepared a brochure or news release to promote program.	4

Item No.	Revised Activity Items	Educative
74	Conducted instruction for usually slower and more capable students.	1 3 4
75	Lectured to a class of business education students.	-
76	Prepared a teaching aid such as overhead transparency or an audio or video cassette.	2 3 4
77	Demonstrated a concept or principle such as effective letter writing.	4
78	Arranged for the purchasing of business education supplies.	-
79	Co-ordinated "on the job" instructions for other instructors.	1 3 4
80	Planned units of instruction for calendar year.	4
81	Developed a business education lesson plan.	5
82	Assisted students in organizing a social club.	-
83	Rehearsed skills useful to job.	3 4 5
84	Demonstrated a technique such as time management.	4
85	Assisted students engaged in programmed instruction.	1 3 4
86	Taught students the importance of self-discipline.	-
87	Presented information with audio-visual materials such as video, tapes and films.	-
88	Used modeling and manipulative materials to present instructions.	-

Item No. Item No.	Revised Activity Items	Educative
89	Took a higher education course	1 2 3 4 5
90	Attended business meeting of professional organization.	2 3 5
91	Analyzed or listened to instructions of peers.	1 2 3 4 5
92	Attended community organization meeting.	1 2 3 4 5
93	Visited or contacted an Agency such as Canada Employment Centre to become familiar with services offered	1 3 4
94	Conferred with another professional e.g. attorney, counsellor, accountant.	1 2 3 4 5
95	Consulted a teaching techniques text.	1 2 3 4 5
96	Presented the findings of a community survey.	-
97	Assessed students basic skills on entrance to program.	1 4
98	Served as advisor to students	-
99	Analyzed data collected from a needs assessment survey	1 3
100	Compiled a list of competencies for business education program.	-
101	Listened to informational media program.	1 2 3 4 5
102	Took an interest course.	1 2 3 4 5
103	Consulted a general reference book such as an encyclopedia	1 2 3 4 5
104	Guided students in individualized study.	-
105	Collected student data through	

Item No.	Revised Activity Items	Educative
	personal interviews.	1 4
106	Conducted instructions with the aid of bulletin board and exhibits.	-
107	Read an inspirational book.	1 2 3
108	Summarized a lesson	-

APPENDIX D

Pilot Letter

NINA POWLETTE
433 Pembina Hall
University of Alberta
Edmonton, T6G 4G9

February 16, 1988

Hi (name)

Thank you for your willingness to participate in the piloting of the enclosed survey questionnaire.

The survey deals with various activities in which business education instructors participate.

I would appreciate if you would:

a) check each item to ensure that the question is easily understood.

b) check the frequency to ensure that each item is in the correct frequency, i.e. (day), week, month/year.

c) add comments as necessary.

d) complete questionnaire and note time needed for completion.

e) return to me by February 26 in the enclosed self-addressed stamped envelope.

Should you have any concerns, I can be reached at 431-0680.

Thanks!

Sincerely

Nina Powlette

Encl.

APPENDIX E

Business Education Instructors' Activity Survey Instrument

BUSINESS EDUCATION INSTRUCTORS' ACTIVITY SURVEY

INTRODUCTION

The purpose of this survey is to find out what activities business education instructors take part in during time spent in making preparations for and carrying out their duties.

A variety of activities are included in the survey. You may find that you take part in some of the activities and not in others. As you go through the list, PLEASE RESPOND TO EVERY ITEM.

Notice that the answer headings are different for some sections.

Nina M. Powlette
Fairview, Alberta

BUSINESS EDUCATION INSTRUCTORS' ACTIVITY SURVEY

INSTRUCTIONS

For each of the following activities, PUT A CHECK IN THE BOX of the answer that BEST DESCRIBES how often in the PAST TWELVE MONTHS you engaged in each activity.

Activity	Not at all a	Once a week or less than once a week b	2 - 3 times a week c	4 - 5 times a week d	6 - 7 times a week e	More than 7 times a week f
Read general interest newspapers and/or periodicals to maintain awareness of current trends in business education						
Trained students to serve as peer instructors						
Consulted a textbook, e.g. Office Procedures						
Consulted a general reference book such as a dictionary						
Conducted instruction for usually slower and/or more capable students						
Assisted students engaged in programmed instruction						
Consulted a teaching techniques text						
Listened to informational media program						
Consulted a general reference work such as an encyclopedia						
Guided students during laboratory experience, i.e., accounting, computer applications						

Activity	Not at all a	Once a week or less than once a week b	2 - 3 times a week c	4 - 5 times a week d	6 - 7 times a week e	More than 7 times a week f
Counselled a business education student						
Discussed teaching strategies with a colleague						
Participated in team teaching						
Prepared and conducted teaching sessions for class outside of business education specialization						
Experimented with different approach to some aspect of business education						
Reviewed and adjusted own lesson plan						
Discussed a business education topic with a colleague						
Conducted group discussions						
Read a business education periodical						
Guided students in the techniques of role playing and simulation						
Held conference with borderline students to evaluate progress						
Read an 'inspirational' book						
Prepared a teaching aid such as overhead transparency or an audio or video cassette						
Rehearsed skills useful to job of business education instructor						

Note that the Response Categories are different from those in the previous Section. There are two levels of Response.

Activity	Not at all a	Once a month or less than once a month b	2 - 3 times a month c	Once a year d	Twice a year e	More than 3 times a year f
Developed long range plans for business education program						
Served on a Business Education Advisory Committee						
Conducted student follow-up study						
Held conference to help individual students meet personal, educational and vocational needs						
Evaluated one's own business education program						
Consulted a psychology text						
Maintained liaison with members of the community						
Served as moderator for a panel discussion						
Wrote a scholarly paper on a business subject and submitted it for publication						
Assisted in the screening of prospective students						
Attended in-service education meeting						

Activity	Not at all a	Once a month or less than once a month b	2 - 3 times a month c	Once a year d	Twice a year e	More than 3 times / year f
Presented a business education related speech to peers, or faculty or community						
Participated in non-teaching school function						
Attended a conference sponsored by a professional organization such as, Alberta Business Education Association, Business Education Council, CABET or NBEA						
Conducted workshops for the benefit of staff on such topics as word processing or database management						
Conducted a community survey						
Conferred with a curriculum specialist						
Consulted with a commercial representative such as publisher or sales person regarding selection of materials/equipment for classroom/program						
Took a higher education course						
Attended business meeting of professional organization						
Analyzed or listened to instructions of peers						
Attended community organization meeting						

Activity	Not at all a	Once a month or less than once a month b	2 - 3 times a month c	Once a year d	Twice a year e	More than 3 times a year f
Co-ordinated 'on the job' instructions for other instructors						
Visited or contacted an Agency such as Canada Employment Centre to become familiar with services offered						
Conferred with another professional, e.g., attorney, counsellor, accountant						
Took an interest course						

PLEASE CONTINUE WITH THE NEXT SECTION

BUSINESS EDUCATION INSTRUCTORS' ACTIVITY SURVEY

Finally, just a few questions about your organization and yourself.

1. At which institution are you teaching?

   _____ Community College
   _____ Technical Institute
   _____ Alberta Vocational Center (AVC)
   _____ Other (Specify)

   _____

2. Location of Institution?

   _____ Northern Alberta
   _____ Edmonton (including Red Deer)
   _____ Calgary
   _____ Southern Alberta

3. In what size community is your organization located?

   _____ fewer than 2,499
   _____ 2,500 to 9,999
   _____ 10,000 to 24,999
   _____ 25,000 to 99,999
   _____ 100,000 to 4 99,999
   _____ more than 500,000

4. Number of full-time business education instructors?

   _____

5. Number of part-time business education instructors?

   _____

6. Check highest academic qualification.

   _____ Diploma
   _____ B. Ed.
   _____ M. Ed.
   _____ B. Sc.
   _____ M. Sc.
   _____ PhD or EdD
   _____ Other (Specify)

   _____

7. **Which program did you complete? (Check all that apply).**

_____ **Vocational Business Education, University of Alberta**
_____ **Secondary Business Education, University of Alberta**
_____ **University of Calgary**
_____ **University of Lethbridge**
_____ **Other (Specify)**

_____

8. **Years of teaching?**

_____

9. **What is your position?**

_____ Instructor
_____ Senior Instructor
_____ Chairperson
_____ Program Supervisor
_____ Department Head
_____ Other (Specify)

_____

10. In what age group are you?

_____ 20 - 29 years
_____ 30 - 39 years
_____ 40 - 49 years
_____ 50 - 59 years
_____ 60 years and over

11 Sex?

_____ Female
_____ Male

THANK YOU FOR YOUR CO-OPERATION

APPENDIX F

Survey Letter

March 15, 1988

Dear (name)

I am a graduate student at the University of Alberta conducting a study on the frequency of activities conducted by business education instructors.

The study is being conducted with non university, post-secondary business education instructors. You have been selected to participate in this survey, and your response is most important to develop a better understanding of business education instructors in Alberta.

The questionnaire takes 15 to 20 minutes to complete. When you are responding to each activity listed, use your best recollection as to how frequently you engaged in the activity during the past twelve months.

A stamped addressed envelope is enclosed for your convenience. I would appreciate your return of the completed questionnaire by March 31, 1988.

The survey is completely anonymous and all information will be kept strictly confidential. The results of the findings will be shared with respondents.

Thank you for particpating in this survey.

Sincerely

Nina Powlette (Ms.)
Graduate Student

Encl.

APPENDIX G

Educative Items Classified by Mode of Learning

EDUCATIVE ITEMS CLASSIFIED BY MODE OF LEARNING

Key: X=Inquiry
Y=Instruction
Z=Reinforcement

Item Number	Items	Learning Mode
12	Discussed teaching strategies with with a colleague	Y
13	Participated in team teaching.	Y
25	Developed long range plans for business education program.	Z
26	Served on Business Education Advisory Committee.	X
27	Conducted a student follow-up study.	X
14	Prepared and conducted teaching sessions for class outside of business education specialization	Y
15	Experimented with different approach to some aspect of my work	Y
31	Maintained liaison with members of community.	Z/X
11	Counselled a business education student.	Y
16	Reviewed and adjusted own lesson plan.	Y

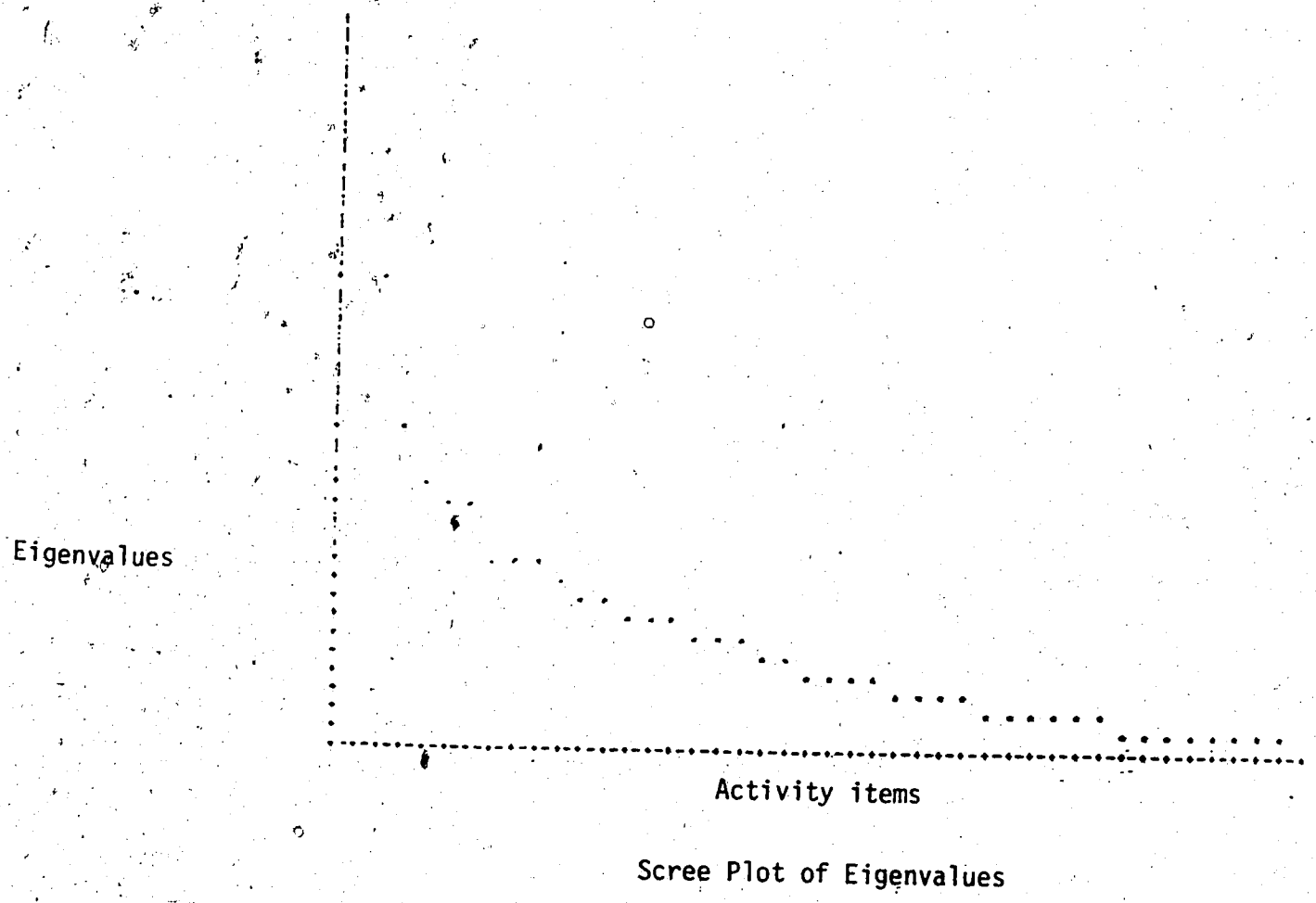
Item Number	Items	Learning Mode
17	Discussed a business education topic with a colleague.	Y
3	Consulted a textbook e.g., Office Procedures.	Z/X
4	Consulted a general reference book such as a dictionary.	Z/X
18	Conducted group discussions.	Y
32	Served as moderator for a panel discussion.	Z
30	Consulted a psychology text.	Z/X
33	Wrote a scholarly paper on a business subject and submitted it for publication.	Z
34	Assisted in the screening of prospective students.	Z/X
35	Attended in-service education meeting.	X
1	Read general interest newspapers and or periodicals to maintain awareness of current trends in business education	X/Y
19	Read a business education periodical	Y
49	Conferred with another professional, e.g., attorney, counsellor, accountant.	Z/X
28	Held conferences to help individual students meet personal, educational and vocational needs.	Z
2	Trained students to serve as peer instructors.	Y/Z
37	Participated in non-teaching school function.	Z

Item Number	Items	Learning Mode
38	Attended a conference sponsored by professional organization such as, Alberta Business Education Association, Business Education Council, CABET or NBEA.	Y
39	Conducted workshops for the benefit of staff on such topics as word-processing and database management.	Z
20	Guided students in the techniques of role playing and simulation.	Y
10	Guided students during laboratory experiences.	Y
21	Held conference with borderline students to evaluate progress.	Y/Z
40	Conducted a community survey.	X
41	Conferred with a curriculum specialist.	X
42	Consulted with a commercial representative such as publisher or salesperson regarding selection of materials/equipment for classroom/program.	X
29	Evaluated one's own business education program.	Z/X
5	Conducted instruction for usually slower and more capable students.	Y
23	Prepared a teaching aid such as overhead transparency or an audio or video cassette.	X
47	Co-ordinated "on the job" instructions for other instructors.	Z
24	Rehearsed skills useful to job.	Z/Y

Item Number	Items	Learning Mode
6	Assisted students engaged in programmed instruction.	X
43	Took a higher education course	X
44	Attended business meeting of professional organization.	X
45	Analyzed or listened to instructions of peers.	Z
46	Attended community organization meeting.	X
48	Visited or contacted an Agency such as Canada Employment Centre to become familiar with services offered	Z/X
8	Listened to informational media program.	X
50	Took an interest course.	Y
9	Consulted a general reference book such as an encyclopedia	Y
22	Read an inspirational book.	Y
7	Consulted a teaching techniques text	Y
36	Presented a business education related speech to peers, or faculty or community	X/Z

APPENDIX H

Scree Plot of Eigenvalues



Scree Plot of Eigenvalues