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TITLE OF THESIS.....Demographic & Personality Variables Associated with Persistence & Promotion in the Alberta Teaching Force.....

UNIVERSITY.....Univ. of Alberta.....

DEGREE FOR WHICH THESIS WAS PRESENTED.....Ph.D.....

YEAR THIS DEGREE GRANTED.....1971.....

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THE UNIVERSITY OF ALBERTA

DEMOGRAPHIC AND PERSONALITY VARIABLES ASSOCIATED WITH PERSISTENCE AND PROMOTION IN THE ALBERTA TEACHING FORCE

by

© GEORGE CHARLES NAYLOR

A THESIS

SUBMITTED TO THE FACULTY OF GRADUATE STUDIES

IN PARTIAL FULFILMENT OF THE REQUIREMENTS FOR THE DEGREE

OF DOCTOR OF PHILOSOPHY

DEPARTMENT OF EDUCATIONAL ADMINISTRATION

EDMONTON, ALBERTA

FALL, 1971

UNIVERSITY OF ALBERTA

FACULTY OF GRADUATE STUDIES

The undersigned certify that they have read, and recommend to the Faculty of Graduate Studies for acceptance, a thesis entitled "Demographic and Personality Variables associated with Persistence and Promotion in the Alberta Teaching Force" submitted by George Charles Naylor in partial fulfilment of the requirements for the degree of Doctor of Philosophy.

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Date July 23, 1971

ABSTRACT

The study reported in this thesis examined the relationship between personality variables, demographic variables and employment in a number of positions in the educational continuum, and was designed to shed more light on the existing knowledge concerning administrative selection and promotion. In the light of the available theoretical insights and existing research evidence, the study's central problem was stated in the form of research hypotheses. These suggested that differences among individuals can be related to (a) remaining in or leaving the Alberta teaching force, and that differences among various categories of educational practitioners can be related to (b) a number of personal variables, (c) a number of professional variables, and (d) a number of personality measures. These four research hypotheses were tested empirically.

The underlying theory on which this study was based was drawn from a number of major sources: the formulation of personality, the selectivity of perception, the effect on personality of the perceived behaviour of leaders, criteria for promotion, and the role behaviour emphasis in upward-mobile individuals, as well as conceptualizations regarding personality-types and administrative selection procedures in the profession.

Data for hypothesis testing were gathered by document search on 460 individuals who were in their final year of professional preparation in the Faculty of Education in 1964/65. There were 141 male persists in the Alberta teaching force and 63 female persists out of an original population of 233 males and 227 females.

Analysis of the data revealed that some variables in every class differentiated significantly among the employment groups, but no single hypothesis was supported by all the related variables. Statistically significant differences at the 0.05 level were found in all the classes of variables; further analysis revealed that many of the twenty-eight variables differentiated significantly between male and female persists, and between male and female non-persists. The four research hypotheses were all accepted in part, and implications drawn from the findings for the practice of Educational Administration and for administrative selection were suggested.

ACKNOWLEDGEMENTS

The writer would like to thank the International Nickel Company of Canada and the Department of Educational Administration for invaluable financial support, the Alberta Teachers' Association and the Faculty of Education for their permission and cooperation in the gathering of the data, and Dr. Eugene W. Ratsoy who gave so freely of his time and advice. Without all of this assistance the study could not have been completed.

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CHAPTER I

THE PROBLEM

I. INTRODUCTION

Educational administration is a process which facilitates teaching, allowing teachers to promote the main function of the school--learning. The importance of reliable selection procedures for identifying and selecting suitable men and women for advancement to administrative positions in the field of education is frequently noted. Predictions of the amount of change which will occur in the future, and the need for such change now, echo in every conference and publication looking at education in the twentieth century (Silberman, 1970). Clearly, the direction taken in the future by education depends in large measure upon the appropriateness of the administrative selection procedures employed now, yet little is known at the present time about the variables and influences which underlie the selection procedures for even the most basic positions. At a conference of Superintendents in 1967, the speaker said,

> Thousands of workshop discussions and fifty years of research have led neither to consensus on criteria nor to reliable predictors of effectiveness (of selection). And this failure is distressing; we assume that agreement on criteria ought to be obtainable, that a single set of predictors ought to exist . . . (Corman, 1967).

The considerable size of some school districts has meant that those responsible for the selection of

administrators are very frequently unfamiliar with the personal qualities of the would-be candidates. Indeed, the establishment of a 'personnel office' to handle and screen promotional prospects, a common procedure in industry, is now well adopted in education. The literature reviewing the success level of such selection procedures, however, is not re-assuring.

> Existing research in selection has been essentially an analysis of the job requirements, of the individual's skill, abilities and knowledge, and a prediction of the 'fit' between the individual and the job. With a theoretical framework of fitting a "round peg" into a "round hole" and a "square peg" in a "square hole," research has been largely concerned in measuring the characteristics of "pegs" and "holes," identifying predictor variables and criteria, and in problems relating to the validity and reliability of measures . . . . Over the years this type of research has not yielded any useful results . . . . It can be said that no tests or procedures developed so far have yielded results better than the fallible judgement of wise and experienced executives (Chowdhry, 1969).

The widely accepted view is that in assessing any individual, be it contented teacher or administrative aspirant, the assessor tends to be most influenced by, and to place most emphasis upon, presage criteria (Mitzel, 1960) which emphasize the readily observable aspects of an individual--his voice, physique, manner--while paying considerably less attention to process criteria--how well he performs his task --and virtually no attention to product criteria--whether there are any results arising from his work. The study by Thomas (1969) is quite unequivocal about this, and confirms the implications of the Worth (1960) and Sorenson (1968) studies.

The evaluation of the task--the search for "square holes" in Chowdhry's terms--has engaged the attention of those responsible for administrative succession for some considerable time, without yet achieving consensus. Similarly, the examination and evaluation of "square pegs," to quote the same authority, has been equally unrewarding. The search has been limited in all cases, however, by the restrictions imposed by the nature of the testing program. The several attempts to examine the personality factors of administrators have perforce had to be made on the actual administrator. There is every reason to assume, however, that the nature of the environment of the job, and the job itself have an effect on the personality. If this is so, then it follows that in spite of the variance which is known to exist in any given population, the individuals engaged in any similar task, be it administrative, management, or product-based, will tend towards a particular mean appropriate to that task. The 'sorting-out' of individuals may be caused by a variety of reasons; the task itself may cause them to evolve towards a norm; the individual may move towards those people with whom he feels an empathy--the "birds of a feather flock together" syndrome. Some individuals may have latent urges which are yet to be realized, such as ambition for power or for financial gain, while still others may be quite content to reach a desired plateau and there remain.

It follows that a clearer picture of the nature of administrators would be available if measures of personality

taken before entry into the employment field could be matched against subsequent performance, thus eliminating the confusing image caused by the task-environment itself. It also follows that if individuals who aspire to or achieve administrative positions have a consistently distinct personality profile, then the initial selection of probable future administrators will be based on a more reliable footing. The opportunity to prepare possible administrators will exist, and the opportunity for long-term on-the-job observation of these individuals would result in a more valid set of data on which to base promotional decisions.

This study examines a series of measures which may have some selective and predictive validity for the selection of administrators and hopes to suggest fruitful areas for future data collection on which to base selection decisions. The study attempts to match (a) a series of personality measures taken when an individual had virtually completed his professional preparation but had not yet entered the field, and a number of demographic variables with (b) his employment position some six years later.

II. STATEMENT OF THE PROBLEM

The purpose of the study was to examine the relationship between various demographic and personality variables and the employment positions of certain categories of educational practitioners.

III. SUB-PROBLEMS

Arising out of the problem are four sub-problems which seem to be worthy of analysis:

1. Is there a relationship between teacher persists and non-persists revealed by personal, professional or personality variables?

2. Is there a relationship between personal variables and the current employment position of educational practitioners?

3. Is there a relationship between professional variables and the current employment position of educational practitioners?

4. Is there a relationship between the personality of educational practitioners and the situational variable of their current employment position?

IV. IMPORTANCE OF THE STUDY

The importance of the early identification of the promotional aspirant is widely acknowledged. The personality of the individual is seen to affect his role-perception, which in turn affects his task performance; the implication is clear that any attempt to maximize the performance of the teaching force must consider this aspect. The increasing professionalism evident in the teaching force (Byrne, 1968; Clarke, 1968) indicates that administrators will be subject to even more stresses and strains in the future than at present. If, then, the role of the administrator is going to change, the

personalities of the new breed of administrators will probably be different from those of incumbents, since the personality of the incumbent determines his perception of his role, and so affects his actions within the role. Yet, apparently, the process of selection draws exclusively from one type of teacher. Organizational succession literature (Gouldner, 1950; Carlson, 1962; Hodgson, 1965) indicates the desirability of selecting the individual not only to fill a particular task (the square peg, square hole syndrome), but also to work effectively with the other administrators. The current concepts indicate that a variety of administrative types is more efficient than a single type.

> The realization (is important) that an archtype, however excellent, would contribute to the failure of the individual and the organization. The concept of "constellation of roles" in selection policies and practices, in placement, and in promotion is of crucial significance . . . . Since selection committees work within a given frame of reference, they continually look for the same qualities, and over the years, as similar types increase in the organization, the effectiveness of the executives and of the selection procedure decreases (Chowdhry, 1969, p. 107).

This recent opinion is typical of the concept that was first suggested by Gouldner nearly twenty years ago, but is only now gaining wider attention from theorists. Gouldner (1950) suggested the possibility of isolating a minimum core of personality characteristics that would be necessary in the composite of the leadership group, but not necessarily in each individual. Thus, the core of personality characteristics may be found in a sample of leaders in varying degrees, and each personality characteristic would contribute to one kind of leadership.

Potentially, educational selection follows the undesirable patterns described earlier; the only mitigating factor is the possibility for the infusion of newer ideas during the graduate work which is increasingly becoming a part of the promotional-aspirant's career pattern. In the light of this problem, a clearer understanding of the personality of the promotional aspirants seems essential, and a first step, the early identification of such individuals is thus of the utmost importance. This study attempts to add light to this aspect of the procedure for selecting educational administrators.

V. DEFINITION OF TERMS

Elaboration of the major concepts employed in this study is undertaken within the context of the later discussions that accompany the conceptual framework and the reviews of the related literature and research. This glossary defines the terms most frequently cited.

Attitude. Jacobson (1952) defines attitude as "the response consistencies of the respondents towards the role . . as revealed in the totality of their responses to items employed as a scale." Other definitions (Hodgson, 1965) which define attitude as "covert tendencies to engage in behaviour that, if made overt, would be defined as action" indicate that the concepts of behaviour and attitude are closely related, the overt being a manifestation of the covert. In this study the term will be used to mean the verbal indication of attitudes as defined above, and as measured by the responses on the Education Student Attitude Inventory.

Education Student Attitude Inventory. An inventory of six scales compiled by Ratsoy (1965), which comprises a professional attitude scale based on Alberta Teachers' Association policies, a professional aspiration scale modelled on the Occupational Aspiration Scale of Haller and Miller (1963) (but with all different educational rather than general positions), and four personality variables selected from the Omnibus Personality Inventory (1962). These are: a Thinking Introversion scale, a Theoretical Orientation scale, a Social Introversion scale, and an Estheticism scale.

A detailed description of the six scales and of the attitudes measured by them is given in Chapter III.

Personality. This psychologically complex phenomenon has been discussed and studied at great length by psychologists. A truism would be to say that this facet of human behaviour lies at the root of almost all psychological study. In a study such as this, an exhaustive consideration of the factors is unnecessary and undesirable. The definition of Hodgson (1965) is appropriate to this study.

> (Personality is) a constantly developing structure of forces, or predispositions to behave in certain 'characteristic' ways. This structure exists within the individual, expressing ontogenetic tendencies of the organism, and reflecting the expectations of salient members of the individual's social environment (p.29).

The Education Student Attitude Inventory (ESAI) used in the original examination of the sample (Ratsoy, 1965) identifies the four factors noted earlier which appear to discriminate between individuals, and which seem to have implications for the task of teaching. These are described in detail in

Chapter III. For the purpose of this study, 'personality' will be used to indicate the four factors derived from the OPI, the measures of aspiration (reflecting a realistic and idealistic relationship of oneself to the profession), and the measures of professional attitude (reflecting relationship with one's peers).

Professional aspiration. For the purpose of this study the five measures on the ESAI will be taken to indicate aspiration. These are; 'realistic' and 'idealistic,' now, and in the future, and a self-appraisal.

Professional attitude. For the purpose of this study the measure on the ESAI, based on ATA policies, will be taken to indicate an attitude towards the norms of the provincial professional body.

Role. "The definition of role has led to probably more disagreement than there is for any other term in role theory" (Biddle, 1966)(cf. also Neiman, 1951; Jacobson, 1952; Gross, 1957). Again, the definition offered by Hodgson (1965) will be sufficient for the purposes of this study.

> The patterned behaviour of an individual's performance in the organization is not equal to the sum total of all expectations as to how the individual should behave in organizations, nor synonomous with concept of position in organizations. Role has a behavioural point of reference, expressing the individual's personality as much as, sometimes more than, the expectations of others in the organization (p. 30).

Variables. For the purpose of this study there will be three categories of variables considered:

(a) Personal variables. These will be delimited to include only sex, age, parental socio-economic status,

ethnic background, religious persuasion, and rural-urban home background.

(b) Professional variables. These will be delimited to include only length of professional preparation, teaching experience, academic grade point average (GPA), years of education past grade XII, years in the Faculty of Education, elementary or secondary route, subject major, number of courses in the subject major, whether teaching at the elementary, junior high, or senior high level, degree held, number of graduate education courses, whether employed in a rural or urban locale, or in Edmonton or Calgary, the urban-rural relationship between home town and current employment.

(c) Situational variable. This term will be used to indicate the employment position in the educational hierarchy. The positions included in this study are classroom teacher, special subject teacher, consultant, coordinator, counsellor, department head, vice-principal, principal, and Central Office personnel.

VI. ORGANIZATION OF THE THESIS

Following Chapter I, in which the area of interest was delineated and the nature of the problem discussed, Chapter II presents the conceptual framework for the study.

Each consecutive step in the argument is presented, along with related research in that particular area. The sub-problems arising from the initial problem are also presented and their relevance to this study discussed. Chapter III presents a detailed examination and explanation of the Education Student Attitude Inventory. Chapter IV examines the assumption of the study and the nature and source of the instrumentation is discussed. The sample is compared with the Alberta teaching force and conclusions are drawn about its representativeness. Finally in this chapter the limitations of the study are acknowledged. Chapter V discusses the statistical design of the study; Chapter VI reports the findings for each of the sub-problems and examines their significance, while the final chapter summarizes the findings and draws some general conclusions and implications for educational administration. The appendix consists of copies of the instruments employed, and the data print-out.

VII. SUMMARY OF CHAPTER I

The importance of a fuller understanding of the procedures which are operant in the selection of administrators was stated. A brief survey of the literature served to familiarize the reader with the nature of previous research in this area, and the lack of consensus in the approaches currently used. The possibility of avoiding the post-facto aspect of the typical succession studies was considered, and the nature of this particular study was indicated.

The significance of the study was discussed, the terms defined in the context in which they are used, and the chapter concluded with a descriptive overview of the remainder of the study.

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CHAPTER II

CONCEPTUAL FRAMEWORK

The purpose of this chapter is to present the conceptual basis for the analysis of the problem. "Data collection in the absence of theory may be almost meaningless activity" (Bass, 1960, p. 21). The following constructs run through the study.

1. The formulation and permanence of personality.
2. Personality types in education.
3. Perception in individuals.
4. Selective perceptions and rewards.
5. The perceived behaviour of educational leaders.
6. Criteria for educational promotion.
7. The orientation of the administrative aspirant.

Theoretical relationships will be developed which are supported by a discussion of each of the constructs, together with a review of the relevant literature and research findings.

I. THE FORMULATION AND PERMANENCE OF PERSONALITY

"The outstanding characteristic of man is his individuality," (Allport, 1937a, p. 3) and the concept of personality helps denote some of the differing individualities of people. Personality is recognized as being a composite of several factors which co-exist. Three general points can be made about personality, however, which have a bearing on this study.

First, personality is relatively stable. It is formed as a result of a multitude of influences and experiences in childhood. In adult life, it does not change readily. A concentrated experience such as attending University for four years may well be considered as an extension of school experience, and common observation indicates a changing personality on some factors at least, usually referred to as a maturing of the student during his studies.

Secondly, personality characteristics are said to be general. A mature individual will have a set of characteristics which are always a part of him, no matter what social setting he enters. Thus, an individual's approach to the environment as dictated by his personality traits will tend to be constant, even under differing circumstances.

Finally, personality is motivational. It implies strivings, wants, needs--"determining tendencies."

> . . . Not only do the varying profiles of personality characteristics tell us what individuals are like, but they also tell us what these individuals characteristically try to do, consciously or unconsciously" (Allport, 1937b).

Specific motives which indicate a "personality need" in individuals are considered to be a factor of the individual's personality, and these are seen to vary with the interaction of individuals and situations or environments. The Gosine research (1970) was based on an examination of the satisfaction of some of these needs.

Individuals are generally motivated to achieve and maintain a favourable image of themselves. This in Maslow's

terms, constitutes self-respect (Maslow, 1943) or self-esteem (Miller, 1962) or a self-system in Sullivan's (1953) terms. The means for achieving this self-respect are various. Status and prestige in the eyes of others may assure this; individuals with this need would tend to gravitate towards prestigious positions or professions. Reaction from others which indicates approval, acceptance, respect, recognition, appreciation of importance and worth may also bring a sense of ego involvement to an individual. A frustration of this felt-need leads to a sense of inferiority, weakness and helplessness, and in extreme cases to neurosis (French, 1963; Kasl and French, 1962). The teaching profession may lead to a certain amount of ego-enhancement, and so may be satisfactory for individuals who have a moderate need. It may well be that because of a variety of factors the new teacher does not have many opportunities for such enhancement at a personal level. Consequently, a new teacher who has a high need for ego-enhancement may well become so frustrated as to leave the profession for what appears to him to be potentially more rewarding occupations.

The importance of the environment to the need-disposition of the individual is recognized by the following definition: "Personality is the dynamic organization within the individual of those need-dispositions that govern his unique reactions to the environment and to the expectations of the environment" (Getzels, 1968, p. 56). Clearly, then, an individual cannot form an attitude, or develop a frame of reference without interacting with the environment. The

frames of reference of his associates and acquaintances have a great bearing on his own development. This learning process takes place in all societies and has its effects almost from birth.

> Man is a social product; his motivating values and behaviour are mainly determined by the dominant values of a given society. This cultural matrix outlines his aspirations and provides the very symbols and concepts with which he thinks (Presthus, 1962, p. 94).

The differences in social behaviour and attitudes which differentiate a North American W.A.S.P. from a South African tribesman are indicative of this training and interaction with their respective societies. Mead (1934) states that:

> . . . the individual experiences himself, as such, not directly, but only indirectly, from the particular standpoints of other individual members of the same group, or from the generalized standpoint of the social group as a whole to which he belongs (p. 138).

The implications are clear. Common frames of reference result from communication about something considered important enough to need communication. Repeated communication--repeated frames of reference--leads to a common attitude about something, which may range from the 'sacred cow' to the 'turning of the other cheek' to your enemy.

Summary

Attitudes, then, are a product of the interaction between environment and the need-dispositions of an individual; the environment of an individual consists of other individuals with whom he relates--consciously or unconsciously. Personality implies need-dispositions which are relatively stable and enduring. The satisfaction of these needs leads to the

adoption of certain attitudes; the needs determine the attitudes and so can be examined by measuring the attitudes.

II. PERSONALITY-TYPES IN EDUCATION

There are as many personalities in education as there are teachers, and each one is unique. If social structure alone were responsible for behaviour patterns, analysis would be simpler, but the perceptions of individuals are created by an interaction between their personality and the social setting:

> . . . not only do different patterns of class socialization and consequent differences in perception and reaction to interpersonal situations characterize individuals, but the same pattern of socialization may evoke different responses among those subject to it (Presthus, 1962, p. 167).

Still, the problem of analysis of personality-types is not completely hopeless, for in any given setting individuals will tend either to conform to the expectations of the organizational roles within the broad limits, or else to leave the organization (Barnard, 1938). "Over a period of time such responses become relatively consistent; they are continually reinforced because they meet compelling individual needs for security, recognition, and group acceptance" (Presthus, 1962, p. 164). Various writers agree with this analysis to a greater or lesser degree, and have attempted to define the various personalities that exist in any given setting, grouping them into modal types. The names vary, but show a remarkable affinity in overall construct. Presthus (1962, p. 9) lists thirteen representative theoreticians, ranging from Plato to

Reisman, and himself proposes a categorization which has been widely used.

> The upward-mobiles are those who react positively to the bureaucratic situation and succeed in it. The indifferents are the uncommitted majority who see their jobs as mere instruments to obtain off-work satisfactions. The ambivalents are a small perpetually disturbed minority who can neither renounce their claims for status and power nor play the disciplined role that would enable them to cash in such claims (Presthus, 1962, p. 15).

Bidwell (1965) suggests that although schools may be viewed as bureaucratic organizational settings, the nature of the client-teacher interaction, and the nature of the responsibilities of the work force (teachers) are such as to cause significant differences in any analysis. Even so, he claims that organizational purposes and the personal characteristics of members (exactly the influences already cited in role-perception formation) create three distinct sets of orientations among school personnel: bureaucratic, near-professional, and excessively client-centered. The parallel between the Bidwell typology and the earlier ones of Griffiths (1963) in his New York City Teachers study is obviously more than coincidental. Griffiths identified a typology of four categories: administrative aspirants, pupil-oriented teachers, subject-oriented teachers, and benefit-oriented teachers.

> Administrative aspirants . . . seemed to do just about anything to get out of classroom teaching . . . . These were the teachers who were GASing, that is 'Getting the Attention of the Superiors' . . . . They took jobs that seemed irritants . . . there was no extra salary . . . but they did give the incumbent a place in the sun . . . . It is clear that to climb in the system one must first GAS.
>
> Pupil-oriented teachers want to stay in the classroom, shun administrative tasks . . . and are most interested in the children. Generally speaking they are the dedicated teachers.

> Subject-oriented teachers . . . are stable, moving horizontally only until they have found a congenial teaching position. Some drop out of public-school teaching, however. Some go to industry, while others get the PhD and move on to college teaching . . . .
>
> Benefit-oriented teachers . . . may have a mild interest in teaching, in the students, or in career enhancement, (but) their real orientation is to the benefits which they receive from the system . . . . Another group within this category is resigned, indifferent, or marking time. Some benefit-oriented teachers appear to have once been GASers but have become weary of the chase . . . (Griffiths, 1963, p. 32).

The Griffiths report draws comparisons with the Presthus typology, and, like the Bidwell research cited, indicates that a probable reason for the different personality types lies with the educational setting.

> It may be that the professional nature of the teaching staff makes for a different set of categories of accommodation to the organization. At any rate, the two-thirds of the staff which can be designated as pupil-oriented or subject-oriented is a higher percentage of individuals devoted to the task of the organization than can be found in non-educational organizations (Griffiths, 1963,p. 34).

Since any organization can be considered as having a variety of personality-types interacting within the setting, so can the teaching force be seen to consist of a variety of personality types.

In any vocational grouping there is a marked similarity among the members. "The members of an enduring group are likely to display a striking homogeneity of beliefs, attitudes, values, and behaviour" (Cartwright, 1960). This may be because the member brings a certain set of values with him into the role, or through a process of socialization within the role (Abbott, 1965, p. 6). The interaction between these factors results in a variety of 'mixes' within any occupational

group, so that there may be wide variation within the group, yet not so wide as the differences between group members and outsiders. There are many indications however, that the occupation which we call 'teaching' is in fact too broad a category when personnel attitudes are under consideration.

> Evidently teaching per se, like managing per se, is less significant than the specific kind of teaching or managing. Whatever one may wish to believe regarding the proper function of teaching, he must recognize that today teachers of mathematics and science have interests that are quite distinct from those of teachers of the social sciences (Strong, 1943, pp. 161-162).

This point of view is strongly reinforced by Getzels and Jackson in their review of teacher personality studies (Getzels, 1963, p. 529). Historically, the literature first discerned the differences in attitudes between subject-area specializations(Strong, 1943), and then extended the findings to encompass the level of teaching, whether elementary or secondary (Getzels, 1963). Enns (1966) pointed out that because attitudes are formed at least in part by the perceptions of the position holder, teachers generally have a micro view of the organization whereas administrators in the same school have a macro view. Therefore the nature of their positions causes them to view the same events in different ways. The analysis and categorizing of the different personality types of educators seems to be limited only by the imagination of the researcher.

Teachers' Personality-Types

An early study (Andrews, 1957), which used the Minnesota battery of personality measures, confirmed that

there are male-female differences in need-disposition, and that distinct differences also exist between various subject matter fields. Von Fange (1961) concentrated on the teaching level, using the Myer-Briggs Type Indicator. He found that the instrument did not discriminate between the promotees (the administrative aspirants) and the confirmed teachers (the pupil-oriented), but that there were differences noted between males and females. Less significant differences were noted in the various levels in the teacher-administrator hierarchy.

The conclusions reached by Griffiths (1963) which have been discussed in the conceptual framework chapter of this study are supported in essential detail by Corman (1967). His analysis of teachers proposes the existence of seven "stances" in an elementary school sample (N=64). The categories he reported were as follows:

> 1. The Pragmatists (N=17)--the organization men among the teachers . . . who were both willing and able to manipulate the organization for their own purposes . . . .
> 2. The Child Focusers (N=9) . . . exhibited a single-minded commitment to the pupil . . . . These teachers <u>really</u> believed that the school existed for the children . . . .
> 3. The Ambivalents (N=4) . . . viewed pupils very much like the child focusers, but perceived a conflict between what they felt they should do, and what they thought they would be permitted to do . . . .
> 4. The Task Focusers (N=6) . . . held traditional values . . . . They were not more committed to learning than others, but their concentration on the tasks of the curriculum made them appear so . . . .
> 5. The Contented Conformists (N=11) . . . were essentially technicians . . . (who depended) on principals and fellow teachers for their ideas . . . teaching was a job like any other.
> 6. The Time Servers (N=9) . . . resemble the Conformists . . . . They were not unhappy (to be teachers) but rather that they were apathetic . . . .

> 7. The Alienated (N=8) . . . . If they persisted in teaching it was because no viable alternate existed for them. Family commitments, a lack of self-confidence or financial considerations made teaching the only possible occupation for them . . . (Corman, 1967, pp. 4-5).

Corman makes the point that all of these modal types had been considered "successful." "All had survived and had achieved some acceptable level of competence in the opinion of their principals"(p. 5). The similarity of grouping among the Presthus (1962), Griffiths (1963) and Corman (1967) typologies is shown in Table 1. The findings of the Ratsoy study (1965) confirmed the earlier research into significant groupings within the teaching profession. Subject-matter field of concentration and amount of previous experience produced the most consistent distinctions. Three of the four scales used discriminated between years of training, and also "prospective teachers completing alternate programs of teacher preparation differed in attitudes" (Ratsoy, 1965, p. v).

Tronc (1969) undertook a study of the perceptions of teachers towards their superiors in the academic hierarchy, comparing perceptions of the promotion-aspirants with those of the non-aspirants. His findings suggest that the Griffiths' typology holds up for one category at least, since promotional aspirants have quite different perceptions of the teaching task and of administrative behaviour than non-aspirants. The individuals who comprise the teaching force do not form a homogenous group on any but the broadest of variables (Charters, 1963), nor are their perceptions of the nature of the teaching task uniform. Corman's assertions support this view.

Table 1

Three Typologies of Individuals

Presthus (1962	Griffiths (1963)	Corman (1967)
1. Upward Mobile	GASers (13%)*	Pragmatist (24%)*
2. Ambivalent	Pupil-oriented (67%)	Child-focuser (15%)
	Subject-oriented (5%)	Ambivalent (8%)
		Task-focuser (10%)
		Contented conformist (19%)
3. Indifferents	Benefit-oriented (15%)	Time-servers (15%)
		Alienated (9%)

*The percentages are as reported by both authors.

He states:

> Not one, but several, modal definitions of teaching will exist among the teachers in any given school. The teachers' individual personality, intellectual resources, and the demands of the organizational structure will interact to produce a number of distinct modal adaptations . . . . Some will reflect, as predicted by traditional organization theory, the shaping of initially diverse personalities by the expectances of others. Some will be explained by common and pervasive personal attributes of groups of teachers. But most modal stances will represent the interplay of these two components (Corman, 1967).

Teachers, then, are seen not as one personality-type but rather as a category of types, defined along subject-area interest lines, by sex, by grade level of teaching, or by promotional aspiration.

The Use of the Personality Inventory

The Omnibus Personality Inventory (OPI). The OPI consists of a battery of sixteen tests drawn from several different sources (Research Manual, pp. 31-38). Intended for use with college populations, the developmental research (Heist, 1962) showed that the OPI successfully discriminated between the average and the gifted student.

Warren and Heist (1960) examined the personality of gifted students using an early form of the OPI, and found that the differences between the gifted and the average students were marked. Gifted students scored significantly higher on Thinking Introversion, Theoretical Orientation, and Estheticism, and in addition gifted males were lower in Social Introversion. Differences were noted between males and females showing female advantages in both Thinking Introversion and Estheticism.

Gottsdanker (1968) compared various academic groupings

by sex (N=300) and found that although his findings replicated those of Warren and Heist (1962) when compared on the basis of ability, the further research based on sex showed interesting results. Though no differences were reported between the average and the gifted males, gifted females scored significantly higher than average females on three of the measures to be used in the present study, namely Thinking Introversion, Theoretical Orientation and Estheticism. In keeping with the earlier studies, Gottsdanker found all of his female sample to score higher than his total male population in Estheticism.

Dispenzieri (1967) added the variables of aptitude and academic achievement in his study of business-school freshmen (N=247). Thinking Introversion and Theoretical Orientation appeared to be related to high aptitude scores, but academic achievement did not correlate significantly with any of the scores. Brown (1968) reached similar conclusions in his study which considered academic achievement and intellectual activity. Though the academic achievement was found not to relate at all, Brown reports a low but significant correlation between intellectual activity and each of the three measures, Thinking Introversion, Theoretical Orientation, and Estheticism. There was no significant correlation between intellectual activity and academic achievement.

The OPI has been used in a series of ongoing studies of creative students carried out by the Center for Research and Development in Higher Education at Berkeley, and reported

by Heist (1968). Seven of the OPI's sixteen scales were found to differentiate between the creative and the non-creative students, among which were Thinking Introversion, Theoretical Orientation, and Estheticism. Creativity was distinguished by lower scores on the first two scales, and a higher score on the latter.

The cross-sectional research has been supplemented by four longitudinal studies. In a four year liberal-arts program (N=289) Stewart (1964) found that although the perceived meaning of the scales had not changed significantly over four years, only the Theoretical Orientation score remained constant. For the rest, both sexes increased in Estheticism, whilst the females increased in Thinking Introversion, and decreased in Social Introversion. No reasons or implications were drawn from these findings. Though the females were found to decrease in Thinking Introversion, males (N= not reported) were found to decrease on the same scale in a study briefly mentioned by Heist (1968), and carried out at M.I.T.

Elton and Rose (1968) accepted the findings of the existence of change over time, and instead sought the characteristics of the changes using factor analysis (N=76). Changed scores in Thinking Introversion and Estheticism resulted in a factor which the researchers labelled Humanistic Thinking, and which accounted for twenty-one percent of the variance. Positive Social Introversion and negative Theoretical Orientation changes loaded onto a factor called Interpersonal Rationality which accounted for nine percent of the variance.

The Faculty in which the student was enrolled (liberal-arts, commerce, or engineering) was found to be an irrelevant factor.

Weseen (1970) examined the change over four years in the scores of Education students (N=105). His findings did not vary significantly from those of earlier researchers: Estheticism did not change, Theoretical Orientation and Thinking Introversion increased, whilst Social Introversion decreased. Weseen's study also examined the amount of change indicated by each scale for a variety of sub-groups. Varying amounts of change in Social Introversion were attributable to (a) age at university entrance, (b) marital status, and (c) size of hometown. Theoretical Orientation was affected in addition by (d) socio-economic status, (e) university average, and (f) the preferred grade level for teaching. Thinking Introversion was further affected by (g) the major subject area. No reason for such conclusions is given in the study.

The Education Student Attitude Inventory (ESAI). Developed by Ratsoy (1965), the Inventory was largely drawn from the OPI and consisted of the four scales discussed above, viz., Theoretical Orientation, Thinking Introversion, Social Introversion, and Estheticism, plus two scales, unique to the Inventory, (a) the Education Profession Attitude Questionnaire, (EPAQ), and (b) the Education Profession Aspiration Scale (EPAS).

The Ratsoy research (1965) (N=1983) confirmed the OPI-based findings, but further analysis by sub-groups revealed several significant findings for the sub-groups on every scale.

For simplicity the relevant findings are presented in table form (Table 2). Higher scores on the Theoretical Orientation and the Thinking Introversion measures were recorded by married males with an older entry age into college. These people taught secondary education, had a higher GPA, longer teacher training and more teaching experience than their peers. The same findings applied to the measure of their Professional Attitude except for the marital status and the GPA measures.

Social Introversion was found to relate to only four of the variables examined; higher scores were registered by younger students with a lower reported socio-economic level and a shorter training period, usually in the After Degree program.

The final measure, Estheticism, was found to be positively related to a high socio-economic level, to humanities majors with a high GPA, and to experienced teachers; females teaching at the elementary level also scored higher than secondary male teachers.

A unique contribution from the Ratsoy study consisted of the development of the Education Profession Aspiration Scale. This scale, developed especially for the study, examined the choice of career objectives at varying points of time. The scale is discussed in more detail in Chapter III. The findings were that there are significantly differing levels of aspiration between males and females, and that differing levels of aspiration are apparent long before the individual feels ready for the upward move.

Table 2

Significant Findings* in ESAI Scores by Sub-groups

Sub-groups	TO	TI	ES	SI	EPAQ
a) Male	+	+	-		+
Female	-	-	+		-
b) Married	+	+			
Single	-	-			
c) Older entry age	+	+		-	+
Younger entry age	-	-		+	-
d) High Socio-economic		+	+	-	
Low Socio-economic		-	-	+	
e) Senior teaching level	+	+	-		+
Junior teaching level	-	-	+		-
f) Humanities major	-	+	+		
Science major	+	-	-		
g) Experienced teacher	+	+	+		+
Inexperienced teacher	-	-	-		-
h) High GPA	+	+	+		
Low GPA	-	-	-		
i) Long teacher training	+	+		-	+
Short teacher training	-	-		+	-
k) B. Ed. route	-			-	+
After Degree route	+			+	-

*Findings are typically reported as "(a) scored higher than (b)." "Higher" is shown by +. Non-significant differences are not reported.

III. PERCEPTION IN INDIVIDUALS

Individuals, each with their own unique personality set, move in an environment which itself is constantly in a state of flux; consequently each individual views 'his' world in a unique manner--his perception of reality is conditioned as much by himself as by the reality itself.

> Perception is that part of the process of living by which each person, from his own unique personal behavioural centre, creates for himself the world in which he has his life's experiences, and through which he strives to gain his satisfaction (Ittleson, 1954, p. 5).

Thus is introduced into the concept of reality an irrational factor for which no external control is possible. And within each transaction between the perceiver and the stimuli, each individual creates his own psychological environment. He attributes his perceptions to the objects in the external world, believing them to be real. Thus these persons, objects and events are perceived as external objective realities, inherently possessing the characteristics that have actually been assessed to them by the perceiver. The perceiver sees what he wants to see, consciously or not, rather than what actually exists.

> Perceptions are not simple, accurate reproductions of objective reality. Rather they are usually distorted, coloured, incomplete, and highly subjective versions of reality (Enns, 1966, p. 23).

According to this transactional theory, purposive behaviour is made more satisfying and less stressful for the individual by substituting for the complex objective reality a modified and simplified personal view of reality, according to the individual's perception and needs.

> The concept of selective interpersonal perception is, therefore, important in understanding administrative relationships. In a sense, each person may be said to function in a world of his own making. His attitudes and values serve as a perceptual screen; he interprets his environment according to the way he perceives it, and he reacts to that environment in accordance with his interpretations (Abbott, 1960, p. 3).

Here is a point for consideration of administrative behaviour in an organizational setting. It is apparently not the objective reality which matters, but the perceived reality of the incumbents; any interaction will be interpreted in terms of the individual's background and culture, his experience, needs, attitudes, and values. "In role behaviour . . . what a person does, feels and thinks depends on what he perceives" (Newcomb, 1956, p. 332).

The argument must follow that there can be no fruitful examination of the administrative process which does not include and account for the perceptions of the individuals who make up the organization. Role behaviour, caused by the perceptions of the individual, which in turn are a product of his personality, is relatively unchanging.

> ... . If knowledge of a person's perceptions is available, it is possible to predict his behaviour . . . . This theory holds that it is not possible for a person to perform in a manner inconsistent with his perception (Pierce, 1957, p. 345).

The implications for both the aspiring administrator and for the incumbent administrator responsible for the nomination, screening or promotion of aspirants are now considered in the light of this research.

IV. SELECTIVE PERCEPTIONS AND REWARDS

When an individual enters an organization, there exist mutual expectations for his behaviour. On the organization's part, there exists a codification of responsibilities and duties, and often by implication, the organization produces a "codified behaviour system" (Abbott, 1965, p. 5) to guide the individual.

Organizations, however, are not abstract entities, but amalgams of other individuals, all of whom have their own personalities and perceptions. The result of the interaction is that the organization's "codified behaviour system" is subject to interpretation by the members who set group expectations for each particular role in the organization. Thus, a newcomer is faced with the formal codified expectations, and the informal but implicit expectations from the members of the organization.

The individual himself brings a unique personality to the organization, and views the expectations through his own perceptual screen, and from the standpoint of his own particular need-dispositions. The articulation and adjustment to these demands forms a major part of each individual's organizational activity, since maladjustment produces anxiety, and anxiety is amongst the most compelling of human drives.

> I believe it fairly safe to say that anybody and everybody devotes much of his lifetime, and a great deal of his energy . . . to avoiding more anxiety than he already had, and, if possible, to getting rid of some of this anxiety (Sullivan, 1953,p. 11).

The developing role concept of an individual through

formal instruction and incidental learning takes place in an interpersonal setting. It is likely to be modified by the perceptual intrusion of his own needs and values, determining which of the organizational values will be emphasized, and which de-emphasized.

> As a member of a formal organization, then, each individual may be conceived to be functioning in two separate situations, the one inbedded in the other. The first consists of the official definition of the position, the codified behaviour system, and the second consists of the individual's own role concept, which represents essentially an expression of those facets of the personality which are relevant to organizational membership. The interaction of these two situations, a perceptual process, represents for each individual a cognitive orientation to roles (Abbott, 1965, p. 7).

The individual's role concept then, being modified by the codified rules and personal perception, reflects elements derived from the role expectations of both the organization and the individual. The individual's cognitive orientation to a role is determined by his perceptual response to the organization's codified behaviour system.

Barnard (1938) makes the point that the individual agrees to submit to the authority of the organization only for so long as there are benefits accruing to the individual; any imbalance in this benefit scale results in the withdrawal of the individual. In order, therefore, to maintain its work force an organization must offer rewards and incentives to the incumbents; these also are intended to motivate behaviour in a manner consistent with the needs of the organization. Any individual who stays in an organization can therefore expect organizational rewards for expected performance. These

rewards take many forms, and are seen to complement the many needs of the individual members. Tenure can be seen to reduce security anxiety; financial increments complement the need for recognition of adequate performance with bonus payments viewed as a reward for an exceptional single performance. Perhaps the most apparent reward an organization can grant is that of promotion within the organization, since this single step usually encompasses increasing amounts of all the other organizational incentives and rewards. Organizational rewards have traditionally been viewed as operating on a continuum--given more salary, the worker will produce more; given less salary he will produce less until a point of non-acceptance will occur below which the worker leaves the organization and so produces nothing. The research of Herzberg (1959) indicates that the reward theory is not quite so simple as it appeared. Some 'rewards' are seen to act as "satisfiers" and will motivate workers while others are seen as "dissatisfiers" or "hygenic" factors. "Satisfiers" can affect output positively when present, while "hygenic" factors have a negative effect on output if absent, but appear to have an optimum level of encouragment above which further increases do not occur. While the efficacy of this theory has not been clearly articulated in an educational setting, there appears to be some support for further research (Hogan, 1968). The categorizing of organizational rewards by Herzberg, however, does not essentially contradict the basic premise of the literature on personality development. The reward system

operates as an intervening variable which encourages an individual to view his role in a different manner, or to alter his cognitive perception of his organizational role. Merton (1940) suggests that the "carry-over effect" of reward in organizations extends beyond the gratification of the individual's immediate need to influence his outlook and attitude towards both the reward system and the organization as a whole. The reward system in an organization is limited in its effectiveness since the perceptions and needs which make up any individual are such as to make him a unique personality; rewards aimed at satisfying a given need are only relevant when the need exists. Incentives are of no consequence if there is no need-disposition calling for satisfaction.

Typically in education the only rewards which the administration can bestow on effective or efficient teachers are those rewards associated with promotion. Yet this kind of reward only has appeal to the individual who has a need-disposition which calls for such recognition. For the remainder of the educational work force the administration is left with essentially no practical incentive with which to encourage increased adherence to the organizational ideals; "output" in a production-oriented organization might correspond to "professional responsibility" as a likely educational euphemism. The implication is that the administrators have effective control (in terms of reward and sanction options) over only a small part of the teaching

force, while the remainder of the teachers are unimpressed and impervious to administrative postures (Carlson, 1962).

V. THE PERCEIVED BEHAVIOUR OF EDUCATIONAL LEADERS

Several studies have been carried out which examine teachers' perceptions of administration. The view of an aspirant to an administrative promotion would necessarily be coloured by his perception of administrative behaviour. The correlation of the perceived with the actual is not at issue here. If the administrator's leadership style is perceived as being high in Initiating Structure, then that will condition the expectation and formation of attitudes in the aspirant (Tronc, 1969, p. 43). That the role may also have many aspects of Consideration will only have relevance if the teacher perceives it as being so. Hemphill (1950) suggests that with an increase in the group size, indicating probable increased distance between the perceiver and the administrator, the subordinate tends to perceive a higher proportion of Initiating Structure behaviour on the part of the administrator than would likely result in a smaller group setting. The findings of Tronc would seem to add support to this view in at least the large school district which he used as a sample.

Almost all of the studies investigating teacher perceptions of administrative behaviour have used the LBDQ XII of Stogdill (1963). The original form has been extensively used in Alberta. Teacher leader behaviour was examined as a predictor of teacher effectiveness (McBeath, 1959), pupil

growth (Greenfield, 1961) and teacher satisfaction (Fast, 1964). Teacher morale and pupil growth formed the variables in Keeler's (1961) study, while superintendents' ratings of effectiveness formed the basis of the comparison of their administrative behaviour for Stewart (1966). The expectations for the principal's leadership role held by teachers (Warren, 1959), and the relationship between staff-characteristics and the principal's behaviour (Morris, 1963) are further examples of the use of this instrument, with the Tronc (1969) study as the latest example. The wide use of the instrument speaks for its validity in the educational setting, and corroborates the view that there are perceived significant differences in administrative behaviour, differentiated under a variety of conditions. Since the present study presumes that certain teachers will perceive administrative behaviour as taking a specific relatively constant form, it is irrelevant to consider whether it actually does take that form; the perception of the form will be sufficient to motivate the promotional aspirant into emulating the perceived behaviour patterns.

VI. CRITERIA FOR EDUCATIONAL PROMOTION

The literature on the selection of administrators abounds with ideas and suggestions, yet is almost devoid of research to substantiate the varied claims for the criteria mentioned. Campbell (1962) mentions personality, experience, and training. Bryant (1965), Forester (1954), and Toombs

(1962) all agree on the need for additional training, as does the School Principal's Yearbook (1958), but fail to agree on the length of experience or personality variables. Sex, too, is considered as a factor in the Yearbook, yet is conspicuously absent in the other writings.

Age. By itself, age is not seen as a valuable predictor of promotional success. Campbell (1956) says bluntly that an older principal is not necessarily a better principal, and Scott (1958) agrees that age and effectiveness are not related.

> The candidate must be old enough to have the necessary maturity, experience, and education to do his work and command respect but he must be young enough so that his services will be available for a number of years (Peach, 1963, p. 10).

Experience. The quotation from Peach cited above is not helpful; the same indirect assumptions underlie the writings on experience. Houseman (1960) suggests the figure of five years experience before promotion, and the National Education Association (1948) also quotes five years as a minimum apprenticeship in the classroom before promotion. Campbell (1956) suggests that too little is better than too much. "It is possible that too much experience in the classroom would actually mitigate against one's becoming an effective principal" (p. 45).

Academic training. Considerable agreement is apparent in the literature on this point. Romans (1957) mentions a Master's degree as a prerequisite for a

principalship, and Otto (1955) and Campbell (1958) agree that a principal needs more training than a classroom teacher.

None of the points, however, is seen as much more than an intermediate hurdle on the way to the principalship, and it should again be noted that the criteria for selecting the prerequisites are not empirically derived. However, at least one local School Board subscribes to the recommendations made in the writings cited. The written policy of the Edmonton Public School Board reads in part:

> Graduate study is desirable for appointment to an administrative position other than an acting one.
> It is the intent of the board, that, insofar as possible, all applicants for the positions referred to shall by 1970 have master's degree standing with emphasis in educational administration.
> Successful teaching experience is necessary.
> That when selecting principals, assistant principals, supervisors and assistant supervisors, other things being equal, the academic standing of the applicant shall be given primary consideration (E.P.S.B. Policy Handbook).

The statement of policy, however, begs the question of evaluation completely. If the criterion is to be successful teaching, who is to make the decision on quality? If experience is to be evaluated, how and who weights successful experience against mediocre but improving performance?

Two studies (Moore, 1966; Thomas, 1969) examined the problem of criteria selection, and used the Mitzel (1960) classification of criteria. Mitzel classifies criteria into three types:

(a) Product criteria. This alludes to the changes produced in the student, and considers actual pupil growth as measured by examination. The shortcomings resulting from the

sole reliance on this is apparent; behaviour changes may not be apparent for several years. These outcomes are "at best, very dim and partial reflections of our educational objectives and very doubtful indicators of the effectiveness of teaching and/or learning" (Downey, 1964).

(b) Process criteria. If the actual methods used lead to desired change in students, then evaluation of the methods used should be helpful. Discipline and instructional methods are included. No account is taken of the fact that there is no universally 'good' method of teaching. As with the Queen of Hearts, "It depends," on teacher, pupil, and subject-matter.

(c) Presage criteria. This classification concentrates on the person of the teacher--his manner, voice, apparent intelligence and the like. The originator of the classification states:

> Presage criteria, so-called here because of their origin in guessed predictions, are from a logical standpoint completely removed from the goals of education. Precedent forces their consideration as criteria, since the bulk of the research on teacher competence has employed dependent variables which fit into this category. In a sense they are pseudo criteria, for their relevance depends upon an assumed or conjectured relationship to other criteria, either process or product . . . (Mitzel, 1960, p. 1484).

The research in this area indicates that in spite of protestations to the contrary by practicing administrators, Product and Process criteria are almost never used. The findings of Moore (1966) and Thomas (1969) are supported by Sorenson (1968) in California who detected the same heavy

reliance in the use of Presage criteria. A number of studies carried out in Western Canada have sought to investigate the process of promotion to the principalship. The descriptive surveys of Davis (1962) and Peach (1963) approached the problem from the basis of information on selection procedures reported in the literature and found little agreement between the recommended practices in the literature and the actual procedures employed by superintendents and boards. The procedures employed nominally consist of various screening devices (age, experience or education requirements) followed by personal assessment by "wise and experienced executives" (Chowdhry, 1969). The studies reported indicate a lack of agreement both in the literature and in practice on the kind of prerequisites required by the promotional aspirant to pass the screening tests. The study reported by Worth (1961) suggests that there is a lack of consensus between "wise executives" on ratings given to teachers, who now constitute probably the most familiar part of the educational team, and the rating of whom is a part of the administrative task. These findings are also substantiated in the recent study of individual ratings (Sorenson, 1968).

The plight of the promotion aspirant is clear. With no criteria or procedures available on which to base his preparation, the aspirant is reduced to courting the favour of the nominators by achieving some sort of visibility to enable him to stand out from his fellow teachers.

Although organizations exist to accomplish organizational objectives, they also serve as arenas in which

> individuals pursue their careers and meet many of their personal needs. This sensitizing idea suggests that . . . aspirants may define their roles quite differently because of their need to achieve visibility (Gross, 1963).

The use of visibility techniques to achieve promotion formed the basis of a study by Ellis (1967) in which recent appointees were asked to indicate the extent to which visibility as indicated by community involvements had influenced their promotion prospects. The respondents indicated that they considered their promotion to be based on their superior teaching ability rather than on any other factors, a finding open to a variety of interpretations about the nature of the reporting or of the self-perceptions of the appointees in light of the Thomas findings. The successful promotees obviously consider that they were recognized to be superior teachers, and to have received the appropriate organizational rewards (promotions) in recognition of that fact. Gross indicates above that there may be other criteria involved.

A study of teacher mobility in New York (Griffiths, 1963) analysed the make-up of the teaching force, and described four personality types based on their perception of the role and on their personality make-up. The typology was deduced empirically rather than theoretically and seems superficially, at least, to be a realistic description of a typical teaching force in Canada too.

In the typology Griffiths includes a category for the teachers who aspire to promotion. These teachers are faced with the difficulty of attaining visibility in a large

faceless organization: however, they feel that to be successful and thereby satisfy their needs they must become visible. They therefore employ tactics which will Get the Attention of their Supervisors, and so are labelled GASers by Griffiths. By definition these individuals form the only part of the teaching force which aspires to promotion, and so almost inevitably the only part of the force which is ever considered for, or achieves promotion. These are the individuals for whom teaching is not the primary interest, yet they are the ones who ultimately become administrators and--in Griffiths' terms "get to run the system."

Recent research on the effect of GASers in an organizational setting (Tronc, 1969) suggests that the effect of such individuals may be quite dysfunctional.

> Level of promotional aspirations is a powerful indicator of administrators' role perceptions . . . . Administrative personnel who possess high levels of promotional aspiration perceive their own ideal role behaviour, as well as the actual role behaviour of their immediate superiors, with an Emphasis on Initiating Structure activities, and deference to superior authority, and with a de-emphasis of the Consideration dimension of leader behaviour . . . . Level of promotional aspirations is inversely related to perceptions of Consideration, and directly related to perceptions of Initiating Structure . . . (p. 192).

The same study points out, however, that the present trends towards greater teacher participation in decision-making, policy formulation by consensus, and emphasis in the supervisory process upon motivation and stimulation would indicate the need for Consideration to play a greater part in the future leader behaviour of school administrators. By definition, too, the GASers, because of their deference to

authority and their organizational approach to essential human problems cannot make decisions on the basis of a professional commitment to client interests and needs.

Though there appears to be a number of prerequisites for administrative promotion, chiefly a minimal experience and some further educational attainment, yet it appears clear that successful upward mobility depends to a large degree on presage criteria. The aspirant is thus indirectly encouraged to resort to GASing in order to become personally familiar with and to the administrators.

VII. THE ORIENTATION OF THE ADMINISTRATIVE ASPIRANT

Although Presthus considers three types of personality, he states that he is well aware that the individuals have their own perceptions and personalities. He adds that these types are merely constructs, which ". . . must . . . be viewed as modal patterns of adjustment to the bureaucratic situation" (Presthus, p. 166). Nevertheless, he suggests that although they may be over-simplified and idealized, their value as conceptual tools should be considered, since they appear to offer some insights into individual behaviour in organizations.

The upward-mobile is seen as the successful organizational member who desires, seeks, and achieves promotion, enjoys organizational life, and reaps the benefits of increased status and salary. Presthus is of the opinion that advancement within a large organization demands a particular kind of individual perception--both of the organization as a

whole and of the roles within it. The upward-mobile's perceptual framework as described by Presthus (1962, pp. 167-179), displays a considerable bias towards the Initiating Structure dimension of leader-behaviour. Because organizational goals and task-orientation become so strongly internalized, the upward-mobile possesses a capacity for action and a sustained attention to business, displaying strength, efficiency, and self-control. Decision-making in conflict-situations presents little difficulty for him, since he sees the organization's values as decisive. He regards his subordinates with detachment and makes decisions in terms of the organization. As a successful organizer, the upward mobile "views men as instruments, as pawns to be manipulated in a master-plan" and he "enthrones administrative, keeping-the-organization-going skills and values" (pp. 178-179). "The upward-mobile's orientation is thus fundamentally 'procedural' as distinguished from the 'substantive' attitude toward work often regarded as decisive in career studies" (Presthus, p. 190). The dysfunctions of recruiting or fostering such a personality syndrome are clearly severe for an organization. The stifling of a creative and questioning personality by restricting organizational rewards to a more bureaucratic personality must result in severe need-deprivation for the non-bureaucratic types. The colloquialisms of the workers bear this out. "If you can't beat them, join them; you can't beat the system; I'm alright Jack," all attest to the acceptance of the value which organizations place on

predictable and subservient behaviour. This syndrome, then, if bad for industry, must be equally bad for education. Yet, as Griffiths clearly states, these people 'get to run the system'; indeed the report footnotes its concern even though such concern is beyond the bounds of the original study.

> . . . The upward-mobile, who is very similar to the GASer in this study, makes up the bulk of those in management positions. Since, as Presthus points out, many of the characteristics of the upward-mobile are dysfunctional in the organization, and since it appears to the research team that many aspects of GASing and many characteristics of the GASers are dysfunctional also, serious questions are raised as to the consequences of the use of the present promotional ladder in New York City (Griffiths, p. 33).

Since the self-nomination type of promotion is practiced in Alberta to a large degree the concern expressed above must also be felt for local education.

VIII. SUMMARY

The present study is based on the theory of personality and need-dispositions as drawn from the writings of Sullivan and amplified by Presthus. The application of these constructs to education follows the suggestions of Griffiths and Bidwell. The rationale for the theory is as follows:

1. Personality is formed in an individual by the interaction of the environment in which he finds himself with his own need-dispositions.

2. Personality, once formed, is relatively enduring, and conditions many of the actions of an individual. Knowing the personality traits may indicate certain behaviour patterns; particular behaviour patterns may occur as a result of, and

as an indication of a certain personality profile.

3. The nature of the selection procedures, training programs and client involvement changes the make-up of the members of the teaching profession vis-à-vis the public at large, or the members of a bureaucratic organization. Andrews (1957) suggested that "at the present state of research in education it may be more useful to investigate the differences between teachers than to attempt generalizations pertaining to all teachers." That conclusion still has considerable merit today.

4. The various typologies of teachers suggested by Griffiths (1963) and Corman (1967) may have significance for Western Canada.

5. Griffiths, Presthus and Bidwell suggest that the recruitment of administrators is invariably from the ranks of teachers, but that generally only one personality type is ever considered for promotion, though von Fange's findings do not support this statement.

6. There is agreement in the literature that presage criteria are almost the only criteria considered in the selection of administrative personnel. This finding complements the argument about the widespread use of presage criteria.

7. The would-be administrator is seen to behave in a like manner as his superiors. The effect of such conscious or unconscious personality change is to ensure the continuance of a supply of aspirants to administrative promotion who are similar to the incumbent administrators.

IX. STATEMENT OF THE HYPOTHESES

The theoretical framework presented above has suggested that a variety of variables may influence personality development. Since it is suggested that personality may affect organizational responses and reactions in individuals, it follows that there may well be a relationship between these variables and organizational response. Conceivably there are a limitless number of variables; it was therefore decided to group them in three categories in order more clearly to consider their implications. These groupings of variables were made according to the apparent relationship of the specific variable to the individual in the profession.

1. Personal variables. These include the sorts of variables which are often labelled 'biological' but are extended to include the variables over which the individual could have no control, such as parental socio-economic status and religious persuasion.

2. Professional variables. The twelve variables considered in this category were all related to the connection between the individual and the profession, and included length of professional preparation, amount of teaching experience when completing the ESAI, and academic performance as measured by university grade point average (GPA).

3. Situational variable. This variable consists of the current employment position of educational practitioners.

With these three groupings of variables as a basis,

and in the light of the theoretical analysis and related research presented above, the sub-problems (supra, p. 4) were stated in the form of research hypotheses.

Research Hypotheses 1.

There will be differences between persists and non-persists in the Alberta teaching force when compared by personal, professional, and personality variables.

Research Hypothesis 2.

There will be differences among various categories of educational practitioners when classified according to a number of personal variables.

Research Hypothesis 3.

There will be differences among various categories of educational practitioners when classified according to a number of professional variables.

Research Hypothesis 4.

There will be differences in personality among various categories of educational practitioners.

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CHAPTER III

INVESTIGATION AND RESEARCH PROCEDURES

This chapter discusses the assumptions on which this thesis is based, and describes in detail the various measures used in the study, along with the justification for their use. The source and nature of the sample is explained and its representativeness is considered in relation to the total Alberta teaching force. The chapter concludes with an acknowledgement of the limitations of the study.

I. ASSUMPTIONS

This study is concerned with the selection of administrators and assumes a career pattern of teacher-vice-principal-principal-central office. It is acknowledged that this may not be a completely desirable pattern from an educational point of view (Sergiovanni, 1966), and the current writings on the desirability of differentiated staffings as an alternative (Corwin, 1969) are noted. Nevertheless, the findings of Longmore (1968) suggest that the majority of teachers and vice-principals would consider "promotion" to mean a move out of teaching and into administration. The qualification to that generalization is supplied by the Martin research (1958) which suggests a different kind of aspiration for female teachers which would affect their career progression. The differences which may be accounted

for by sex are examined in the research hypotheses, but are thought to be a product of the reluctance of authority figures to promote women to administrative positions, and a reluctance on the part of women to seek such promotion. The effect seems to be that women, having different aspirations, engender a different career progression which takes the route of teacher-counsellor-consultant.

A second and more general assumption concerns the actual data which were used to test the hypotheses. The data pertaining to biological and situational factors are strictly factual and unambiguous. Those dealing with attitudes and aspirations, however, were produced in answer to a questionnaire. The obvious assumptions must be made here. It is assumed that the responses given were a true reflection of the perceptions of the individuals, and further that the perceptions of the nature of the questions was uniform throughout the sample. These objections can be largely overcome by the careful development, revision, and validation of the instruments involving several different samples. The reliability of the instruments used in this study is discussed later in the chapter. The advantages of a questionnaire technique were considered to be sufficient in number and importance to warrant the use of the technique rather than observation or interview, both of which may be subject to even more bias and discrepancy. The advantages of the questionnaire approach cited by Selltiz (1960) include a marked superiority from a utilitarian point of view when

large samples are used, a uniformity from one measure to another, and a greater confidence in respondents that their anonymity will be respected, thus ostensibly leading to greater honesty. Indeed, one authority suggests that questionnaire responses are more useful than observation.

> Sometimes what a person says . . . is truer from a long term viewpoint than inferences drawn from his actions under special conditions . . . . As a matter of fact, people often lie by their acts and tell the truth with words. The whole conventional dichotomy is misleading because speech is a form of behavior (Kluckholn, 1962, p. 406).

The final assumption to be made concerns the nature of the sample and the implications of the statistical techniques employed. These considered frequencies and means, and as such made assumptions regarding the normality and the distribution of variables within the population from which the sample was drawn. These assumptions are discussed at greater length in the section delineating the statistical techniques. In all cases the assumptions were met, or a justification for their absence given. Of greater concern is the assumption of normality of variance within the sample. This assumption is made in statistical analysis in order that inferences may be drawn regarding other populations. In the case of the population of this study, it is acknowledged that it differs in several respects from the teaching population at large. This is primarily a product of the nature of the sampling. All of the individuals who comprised the sample are degree holders who have had at least four years of university attendance. Any attempt to infer to the

general population would be faulty. However, two points should be made. Ferguson (1966) suggests that ". . . with most sets of real data the assumptions . . . are, at best, only roughly satisfied . . . ." (p. 295), and Glass (1971) points out that inferential statistical analysis is only an approximation, since not only is no population exactly the same as any other, but in fact is never exactly the same as itself over any time period. Thus, not even descriptive statistics are wholly accurate. With these two provisos in mind, the conclusions drawn from the findings may justify the claim to a wider applicability than the present sample.

II. DATA REQUIRED

In order to test the proposed hypotheses, it was necessary to obtain the following sets of data.

1. Biographical data. This included such items as age, sex, and marital status.

2. Situational data. This included the extent and nature of academic training, and the nature and extent of teaching experience. These measures were taken at the beginning of the 1970/71 academic year.

3. A series of personality measures. These covered four areas of personality, and were called respectively Thinking Introversion, Social Introversion, Theoretical Orientation, and Estheticism. These measures were taken at the end of the individuals' academic training, i.e., in the spring of 1965.

4. A series of professional aspiration measures covering

the realistic and the ideal teaching position to which the individual aspired immediately after the completion of training, and after 10 years of experience, and a personal rating measure.

5. A professional attitude measure, taken at the completion of academic training.

III. INSTRUMENTATION

General Information Questionnaire

The general information questionnaire (Appendix A) constructed by Ratsoy (1965), consisted of twenty-two items. The purpose of the questionnaire was two-fold: first, to secure data regarding the characteristics of the sample population, and second, to enable classification of the sample for testing the hypotheses involving this group. The questionnaire solicited the following information: (a) name, (b) age, (c) sex and marital status, (d) background of education, (e) teaching experience, (f) length of time spent away from school or university, (g) home background and present place of residence, (h) parents socio-economic level, (i) peer associations, (j) anticipated length of pre-service preparation, (k) preferred teaching level.

Opening Report Form

The Opening Report Form No. 1302-328 (Appendix) is completed by every teacher in the schools in Alberta annually in September. The following up-dated situational and biographic information were derived from the form: (a) marital

status, (b) age, (c) years of education beyond Grade XII, (d) current teaching position, (e) total years of experience, (f) teaching level, and (g) consistency of employment with training.

The Education Student Attitude Inventory (ESAI)

The inventory was developed for use in a study conducted by Ratsoy (1965), and consists of four personality measures and measures of professional attitude and aspiration. The parts respectively consist of:

(a) Thinking Introversion (TI) (60 items): Persons scoring high on this measure are characterized by a liking for reflective thought, particularly of an abstract nature. They express interests in a variety of areas, such as literature, art, and philosophy. Their thinking tends to be less dominated by objective conditions and generally accepted ideas than that of thinking extroverts (low scorers). Extroverts show a preference for overt action and tend to evaluate ideas on the basis of their practical, immediate application.

(b) Theoretical Orientation (TO) (32 items): This scale measures interest in science and in scientific activities, including a preference for using the scientific method in thinking. High scorers are generally logical, rational, and critical in their approach to problems.

(c) Estheticism (Es) (24 items): The high scorers endorse statements indicating diverse interests in artistic matters and activities. The content of the statements in this scale extends beyond painting, sculpture, and music and includes interest in literature and dramatics.

(d) Social Introversion (SI) (54 items): The high scorers withdraw from social contacts and responsibilities. They display little interest in people or in being with them. The social extroverts (low scorers), on the other hand, seek social contacts and gain satisfaction from them (Research Manual, 1962).

The first four scales were selected by Ratsoy from the sixteen scales which comprise the Omnibus Personality Inventory

(Heist, 1962), on the basis that:

> . . . there is considerable overlap in items and a high correlation between a number of the OPI scales; furthermore, items on a number of the scales appeared to be of a threatening nature. Four scales were selected from the OPI battery on the basis of high KR-21 reliabilities, low overlap in items, and the apparent non-threatening nature of the items (Ratsoy, 1965, p. 81).

The Research Manual (1962, pp. 26-27) describes the factor analysis of the four scales selected, and indicates that three of the scales loaded heavily on a factor called Scholarly Orientation, while the remaining scale was the only one in the Social Introversion factor, with a reliability co-efficient of .85. Tables 3 and 4 show the means of the scales in more detail, as well as the stability, reliability and item overlap.

The use of data derived from personality inventories is consistent with the theory of personality development discussed in Chapter 2 of this study. In particular, the nature of the OPI was described thus:

> The chief approach to assessment in an inventory of this type is based on the assumptions that all or most persons in a particular society or culture acquire or develop a number of psychological characteristics in common, but that the diversity of genetic contributors and environmental experiences lead to great variation in the development of these characteristics. Since this is the case, it is also assumed that the scales (measuring devices) can be constructed, with satisfactory validity, to tap the different degrees to which a characteristic exists. The measured characteristics, sometimes referred to as personality dimensions, are represented in ways or styles of thinking, in general orientations to things, events or persons in the environment, in feelings or emotional expressions, and in perceptions about oneself. These ways of thinking or perceiving are verbally expressed in the form of attitudinal statements, opinions, preferences, and interests to which a person is asked to respond, indicating whether or not they describe or typify him in these respects. A specific scale is composed of

Table 3

Reliability and Stability of OPI Scales

	TI	TO	Es	SI
KR-21	.85	.74	.80	.85
Test-retest	.94	.81	.90	.91
Mean	34.8	18.8	11.5	20.7
S.D.	9.5	5.2	5.0	8.8

(N = 2,390)

Table 4

Item Overlap and Scale Intercorrelation of OPI Scales

	TI	TO	Es	SI
TI	--	6*	2	0
TO	.62**	--	1	1
Es	.63	.22	--	0
SI	-.15	.00	-.12	--

(N = 2,390)

*Item overlap indicated above the diagonal.

**Intercorrelations indicated below the diagonal.

> a related set of such statements . . . which are focused on a measurable characteristic, such as . . . feelings of introversion. Each statement in an item or scale serves as a sample of behavior or an indicator of the overall characteristic. The number of statements responded to, according to the keyed scoring, serve as a measure of the degree of intensity to which the characteristic exists in comparison with the average score obtained on a large, representative sample of students. Thus, any score represents a relative and not an absolute measurement (Heist, 1968, pp. 218-219).

Though empirically derived, the OPI scales have proven to be predictive (p. 24, supra.) and have proven to be discriminating for a variety of identifiable groups of students by subject-area specialization, by talent in artistic pursuits, and by academic achievement (Research Manual, p. 54). The validity of this instrument is thus sufficiently well proven to justify the inclusion of data derived from its use in this study.

Education Profession Attitude Questionnaire (EPAQ) (20 items)

This scale was devised especially for the Ratsoy study and consists of a series of statements drawn from official ATA policy. The response range is through the normal five response states from "Strongly Agree" to "Strongly Disagree," and measures individual agreement with the official policy. The belief is that agreement with official policy indicates an acceptance of professional ideals, and that therefore the higher the score on this particular scale, the higher the professional orientation of the individual completing the scale.

The Education Profession Aspiration Scale (EPAS)

This scale required that five choices be made from a list of 60 educational positions derived from the Education Profession Prestige Scale (EPPS). The respondent was asked:

(a) Which is the BEST position you are REALLY SURE YOU CAN GET when your schooling is over?

(b) Which ONE would you choose if you were FREE TO CHOOSE ANY of them you wished when your schooling was over?

(c) Which is the BEST ONE you are REALLY SURE YOU CAN HAVE ten years from now?

(d) Which is the ONE you would choose ten years from now, if you were FREE TO HAVE ANY of them you wished?

(e) Which is the BEST ONE you are CERTAIN you would be succesful in, if you were given the opportunity of having it when YOUR SCHOOLING IS OVER?

In every item the respondent chose a position by number identification from a list of 60 educational positions. These positions had been previously rated in terms of prestige by a sample of 'expert opinion,' as described in detail in Ratsoy (1965, Ch. V). Thus it was possible to allot a score to each individual on the basis of his selection of position for each of the five items in the EPAS. In addition, the sixty positions were grouped under six types of activity ranging from classroom teaching through such areas as Administration and Counselling to Services. It was possible to define an area of interest for each individual in addition to his desired position. The full range of positions, EPAS

values, and categories are shown in Table 5.

Justification for the use of the ESAI

The ESAI, as already indicated, consists of four scales drawn from the OPI, plus a Professional Aspiration scale and a Professional Attitude scale. The OPI scales were selected on the basis of face-relevance to the teaching profession, non-threatening nature, and low overlap of items. The statistical analysis (Research Manual, p. 26) suggests that the scales do in fact measure different facets of personality. The use of such an inventory to examine differences between administrative promotional aspirants and non aspirants is based on the following points.

1. By its very name, the ESAI avoids the pitfall of many leadership studies, namely that of a post-facto analysis of traits and personality. The measures included in the inventory were uncontaminated by the administrative act itself, since they were all taken before promotion was even requested and before the respondents in the sample began teaching.

2. There appears to be an equivalance between the personality factor measured by Social Extroversion and by Thinking Introversion as reported in the Research Manual (supra p. 61) and the possible personality of the type of person who might be bold enough to push himself forward, and indeed to have promotional aspirations.

3. There appears to be a superficial equivalence between Theoretical Orientation and Estheticism (which seem to define opposing personality types) and various subject matter fields,

Table 5

Education Profession Prestige Scale Rankings and Scale Values

Combined Rank[a]	Position Title	EPAS Number	EPAS Value[b]	Category Number[c]
1	President of a University	51	82	3
2	Chief Superintendent of Schools for the province	59	81	3
3	Dean of the Faculty of Education	50	77	3
4	Assistant Dean of Education	49	76	3
5	Deputy Minister of a Provincial department of education	60	75	3
6.5	Superintendent of a city school system	33	74	3
6.5	President or Dean of a junior college	43	74	3
8.5	Department Head in a faculty of education	48	70	3
8.5	Provincial inspector of high schools	56	70	2
10	Principal of a city secondary school	27	69	3
11.5	Director of a division within the provincial department	57	68	3
11.5	Superintendent of a school division or county	55	68	3
14.5	Assistant superintendent of a city school system	34	60	3
14.5	Professor in the faculty of education	47	60	1
14.5	Director of a branch within a departmental division	58	60	3
14.5	Executive secretary within a provincial or national teachers' organization	53	60	3
17	Curriculum consultant in a city secondary school	29	58	5
18	Research director in a city school system	36	57	5
19.5	School psychologist in a city school system	39	55	4
19.5	Principal in a small town secondary school	26	55	3
21.5	Curriculum consultant in an elementary school	17	54	5
21.5	Director of public relations in a city school system	38	54	6
25	Elementary grade subject supervisor	10	50	2
25	Research worker in preschool child growth and development	3	50	5
25	Lecturer in the faculty of education	46	50	1
25	Assistant principal of a city secondary school	25	50	3
25	Junior college personnel director	42	50	6
30	Secondary school subject supervisor	28	49	2
30	Research worker in a provincial or national teachers' organization	54	49	5
30	Junior college teacher of a subject field	41	49	1
30	City school system personnel director	40	49	6
30	Psychologist or counselor in an elementary school	16	49	4
33	Principal of a city elementary school	14	48	3
35	Secondary school department head of a subject area	23	46	1
35	Secondary school guidance director	31	46	4
35	Junior college registrar	44	46	6
37.5	Assistant principal of a city elementary school	12	45	3
37.5	Elementary teacher of physically or mentally handicapped cildren	8	45	1
39	Cooperating teacher in a secondary demonstration school	22	46	1
40	Teacher of academic subject in a city secondary school	20	43	1
42	Director of audio-visual materials in a city system	37	42	6
42	Principal of small town elementary school	13	42	3
42	Assistant principal in a small town secondary school	24	42	3
45	Junior college business manager	45	39	6
45	Teacher of academic subject in a small town secondary school	18	39	1
45	Cooperating teacher in an elementary demonstration school	9	39	1
47	Supervisor of nursery schools	2	38	2
48	Assistant principal in a small town elementary school	11	37	2
50	Staff officer or field worker for a provincial or national teachers' organization	52	36	6
50	Teacher of vocational subject in a city secondary school	21	36	1
50	Director of a private nursery or kindergarten	4	36	3
52	Elementary teacher of special subjects (art, music, P.E. etc.)	7	35	1
54	Teacher of combined/separate grades in a city elementary school	6	32	1
54	Athletic coach in a city secondary school	30	32	6
54	City school system business manager (supplies, purchasing)	35	32	6
56	Teacher of vocational subject in a small town secondary school	19	27	1
57.5	Nursery school or kindergarten teacher	1	25	1
57.5	Elementary school librarian	15	25	6
59.5	Secondary school librarian	32	24	6
59.5	Teacher of combined/separate grades in small town elementary school	5	24	1

[a]Based on the mean of the Thurstone-Torgerson scale values for the Thurstone-Torgerson and NORC rankings.

[b]Scale values standardized to a mean of 50 and standard deviation of 15

[c]Category numbers represent the following: 1-Classroom teaching; 2-Supervision of classroom teachers; 3-Administration; 4-Counselling; 5-Research; 6-Services.

e.g., science and fine arts. If this is so, these two scales may well differentiate between various subject matter fields as indicated by Ratsoy (1965) and the "administrator personality" which by definition (Griffiths, 1963) is not subject matter oriented.

4. The presence in the inventory of an aspiration scale completed before experience should indicate the presence of the 'need' for promotion in individuals as an aspect of personality.

It therefore appears that the ESAI is suited to the examination of the promotional aspirant within the parameters of the present study.

IV. DELIMITATIONS

1. The sample consisted of individuals who were in full time attendance at the Faculty of Education, University of Alberta in the 1964/65 academic year. The fourth year Bachelor of Education students, the Bachelor of Education after an Approved Degree candidates and all of the experienced teachers who had returned for certification up grading were included on the assumption that these were the most likely groups to be leaving the University and entering or returning to the teaching profession in the Fall of 1965. The students in the first three years of the Bachelor of Education degree program were excluded. Since other studies (Weseen, 1970) have shown that changes on the ESAI are registered over the period of University attendance, intermediate readings would

not be reliable indicators of terminal standing on the selected measures.

2. In the six years since graduation there have been considerable changes within the sample, resulting in a number of individuals withdrawing from the Alberta teaching force. Only the individuals who have remained in Alberta were examined for indications of promotional aspirations; specifically, no attempt was made to trace any of the non-Albertans. However, in part of the analysis, the latter were compared with the persisting teachers to determine whether there were significant differences between persists and non-persists on the various ESAI measures.

3. The problems examined are not universally applicable to the whole sample. For example, a problem concerning female teachers, elementary and secondary respectively, automatically excludes half of the population. Appropriate adjustments in the sample size were made for several of the analyses.

V. THE SAMPLE

In 1964 as part of a doctoral study (Ratsoy, 1965) a questionnaire was administered to 1,983 students in the Faculty of Education. Included were virtually all of the students in all four years of the Bachelor of Education program, students who were enrolled on a Bachelor of Education program after another approved degree, and experienced teachers who had returned for certification upgrading. The present

study draws from the sample of the earlier study. The students in the first three years of the Bachelor of Education program were excluded, since the scores of the various variables have been shown to change over the four years, and consideration of intermediate scores may well have led to invalid results. Also excluded were 28 responses with incomplete identification. Table 6 summarizes the two samples.

All of the sample completed the General Information Questionnaire and the four Omnibus Personality Inventory scales (Thinking Introversion, Social Introversion, Theoretical Orientation, and Estheticism), the Education Profession Attitude Questionnaire (EPAQ) and the Education Profession Aspiration Scale (EPAS). The returns for the latter scale were incomplete in a number of cases. For this reason, in the analysis of data a different N appears for some of the EPAS items; in general the EPAS N's are somewhat smaller than the N for the other scales of ESAI.

Distribution of Sample

Table 7, summarizing several characteristics of the sample shows that 63 percent of the sample (N = 292) had had no teaching experience prior to completing the test instruments, and 78 percent of the sub-sample (N = 358) had opted for a secondary route specialization.

Without teaching experience. This sub-sample includes virtually all of the fourth year education degree students and the students in the After Degree program. Only five

Table 6

Comparison of the Samples in two Related Studies

	Ratsoy (1965)	The Present Study			
		Persists	Non-Persists	Unidentified	Not Used
First Year Education Student	782	--	---	--	782
Second Year Education Students	510	--	---	--	510
Third Year Education Student	203	--	---	--	203
Fourth Year Education Students	118	53	63	2	---
Graduates of Other Faculties now in Education	167	71	93	3	---
Experienced Teachers	293	80	100	23	---
		204	256	28	1495
	1983		1983		

Table 7

Distribution of the Sample by Teaching Experience, Route, Program, Year and Sex

Year	Elementary Route			Secondary Route			Totals			
	Male	Female	Total	Male	Female	Total	Male	Female	Total	
No Experience										
4th yr. Ed.	6	18	24	51	55	106	57	73	130	
A.D. Program	5	20	25	91	31	122	96	51	147	
Sub-total	11	38	49	142	86	228	153	124	277	63%
Percent			17%			83%			100%	
Experienced										
1 year	7	1	8	14	19	33	21	20	41	
2-4 years	-	1	1	9	7	16	9	8	17	
5-7 years	7	20	27	26	31	57	33	51	84	
over 7 years	6	11	17	11	13	24	17	24	41	
Sub-total	20	33	53	60	70	130	80	103	183	37%
Percent			32%			68%			100%	
Totals	31	71	102	202	15	358	233	227	460	
Percent	6%	16%	43%	35%	78%	50%	50%			100%

respondents were excluded because of identification difficulties. It is worthy of note that although approximately equal numbers of students enroll in the first year for elementary and secondary specializations, the proportions are quite different after four years of training. Only 17 percent of the total final sample were in the elementary route, compared with the approximately 50 percent in the first year. The great majority of elementary route students are females and it is largely the females who withdrew before completing the degree program. One implication of this is that the elementary practicing teachers are generally less well trained than the secondary teachers. This trend is not reversed in later years, as the data on the experienced teachers reveal.

With teaching experience. About 37 percent (N = 168) of the sample had had teaching experience in amounts varying from one year to more than seven years, and had returned to University to upgrade their certification standards. Twenty three responses were excluded because of identification difficulties. It is interesting to note that the ratio of men to women is the opposite to that of the inexperienced teacher sub-sample. Here there were approximately 61 percent women to 39 percent men; on the basis of this sample the assumption made earlier regarding premature female withdrawal seems to be valid; this sub-sample showed a considerable trend towards post-certification upgrading after experience. This sub-sample also served a useful purpose in acting as possible representatives of the profession at large against which the

sub-sample of inexperienced teachers might be compared. The sample consisted of 229 males and 231 females for a total of 460 individuals; of these 102 were elementary teachers and the remaining 358 were secondary teachers.

Teacher Persistence

As noted above, there have been considerable changes within and among the sample in the six years since the initial personality measures were taken. For a variety of reasons a number of individuals have left the Alberta teaching force, and so are no longer active members of the ATA. The reasons include family responsibilities, return to University, teaching in other provinces, as well as disenchantment with the profession resulting in alternate employment. All the studies of teacher persistence (e.g. Chamchuck, 1965; Charters, 1970) comment on the impossibility of tracing the non-persists after any length of time; current addresses or locales were not available for the large majority of non-persists in this population. The analysis, therefore, concentrated on the persists for the majority of the hypotheses, and on a comparison with the non-persists in one part of the study. Table 8 summarizes several of the characteristics of the sample as tested.

VI LIMITATIONS

The extent to which the findings of a study such as this could be generalized is seriously limited. The personality of the teacher is seen as one of the more important

Table 8

Comparison of the Teaching Persists with the Non-Persists

	Elementary			Secondary			Totals			
	M	F	T	M	F	T	M	F	T	
Persists										
B. Ed.	7	2	9	31	16	47	38	18	56 28%	
A.D. program	3	10	13	60	17	77	63	27	90 44%	
Experienced Teachers	11	9	20	26	12	38	37	21	58 28%	
Sub-totals	21 (50%)	21 (50%)	42 (100%) 21%	117 (72%)	45 (28%)	162 (100%) 79%	138 (68%)	66 (32%)	204 (100%) 100%	44%
Non-Persists										
B. Ed.	3	12	15	20	29	49	23	41	64	
A.D. program	2	10	12	37	33	70	39	43	82	
Experienced Teachers	4	29	33	25	52	77	29	81	110	
Sub-totals	9 (29%)	51 (71%)	60 (100%)	82 (56%)	114 (44%)	196 (100%)	91 (36%)	165 (64%)	256 (100%)	56%
Totals	30 (29%)	72 (71%)	102 (100%) 22%	199 (56%)	159 (44%)	358 (100%) 78%	229 (50%)	231 (50%)	460	100%

variables in the process of education (Getzels, 1963, p. 506), and as such forms the kernel of this study. Yet personality, essentially a covert concept, is revealed overtly only by behaviour, which may, or may not, bear a specific relationship to the personality. It seems quite possible that education and experience may change an individual's personality, yet not change his behaviour. The reverse seems to be an even more likely possibility. The resistance of behaviour to change over time is described by Leary (1957):

> Perhaps the most stable property in an individual is the manner in which he goes about the business of interacting with other people. It is from these properties or styles of interaction that other people form their impression of that person (Leary, p. 91).

A considerable limitation of this study is the examination of only those personality measures which are present in the ESAI. Nevertheless, there may be other aspects of personality not examined in the present study which would have relevance for this study. In their absence, the presently available measures were used. These are presumed to be relatively stable, and the study attempted to define relationships which were thought to exist between personality and promotional aspiration. The only behaviour examined was that manifest in achieving or not achieving an administrative or consultative position. Specifically, there is no implied judgement of the relationship which may exist between the personality measures and teaching competence. Thus there is no implied judgement of the competence of the successful administrator to carry out his chosen task.

Similarly, no attempt was made to identify, delineate, or imply attitudes which are considered to be desirable in a teacher.

The final limitation concerns the relationship between the sample and the remainder of the Alberta teaching force. That this sample was not typical of the non-degree holding teachers in the province is acknowledged. Inferential statistics were used throughout the analyses on the assumption that the sample could be considered representative of the growing number of degree holders employed in the Alberta teaching force. That this might not be so is a limitation in the applicability of the findings to a larger population.

VII. SUMMARY

This chapter explained the design of the study, and delineated the assumptions upon which the study was based. The sources of data were described, and the nature, development and prior use of various instruments was explained. The use of the chosen instruments was defended and the justification for their use was given, along with the delimitations arising out of their use. The sample was described in some detail and tables were used to explain the make-up of the sub-samples of persists and non-persists. The chapter concluded with a statement of the limitations arising out of the data and hence of the study.

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CHAPTER IV

ORGANIZATION OF DATA AND STATISTICAL PROCEDURES

This study was based on the premises that there are differences of personality among members of the teaching profession, that these differences could be determined from the attitude measures used in the present study, and that subsequent employment positions are in some sense related to, even though not necessarily caused by, these personality differences. The present chapter outlines the organization of the data and the statistical design of the study.

I. PREPARATION OF DATA CARDS

The data used by Ratsoy in his study (1965) were obtained and the cards pertaining to the selected sample were replicated. A list of the names of the individuals in the present sample was obtained from the same source and access was granted to the Alberta Teachers' Association files, the Department of Education Certification files and the Faculty of Education files. From these additional information was obtained, which updated and augmented the original biographical data of the ESAI.

The Alberta Teachers' Association files

These revealed the following information:

(a) whether the individual was still actively engaged in the profession,

(b) the school district, county or division in which he was currently employed,

(c) the years of education beyond grade XII, and

(d) the years of teaching experience.

Given the name of the employing board, it was then possible to go to the Opening Report Form (supra, p. 62) and gather the following additional information for each individual:

(a) marital status,

(b) age,

(c) degree(s)

(d) teaching position, and

(e) grade level currently being taught.

Department of Education Files

These were used in an attempt to trace the changes of name resulting from marriage, and in tracing the certification of individuals who had never taught in the public or separate schools in Alberta. When status or present names were determined, the individual was usually identified in the ATA active or inactive file.

Faculty of Education Files

Information on father's profession, birthplace, or religious affiliation is not required of present University

entrants, but in 1960 when most of the sample entered University this information was gathered on the "Application for Enrolment" form. Faculty files thus yielded the following information:

(a) ethnic origin (i.e., father's nationality and/or birthplace),

(b) religious affiliation,

(c) extent of further course work beyond B. Ed., and

(d) department in which further course work was undertaken.

Further checks were made in the Registrar's files, but served mainly to confirm the Faculty files. In a few cases, where transfer from other faculties had been effected, the Registrar's files contained the "Application to Enrol" form, thus revealing the ethnic and religious information sought.

The data thus collected were punched onto IBM cards and a program prepared which collated this data with the original ESAI data, either adding to or substituting for the earlier data. The new data cards thus consisted of the following sections:

(a) biographical/situational factors (20 items),

(b) the EPAS positions (5 items),

(c) the EPAS category (1 item),

(d) the standardized OPI scores (4 items),

(e) the EPAQ score (1 item),

(f) the ID number.

A further program was prepared which transformed the

EPAS positions chosen for the five responses into scores which could then be classified and compared both internally and with other responses (supra, p. 67).

II. STATISTICAL DESIGN OF THE STUDY

The statistical techniques used to examine the hypotheses were statistically rather elementary. They comprised the chi-square test for differences between pairs of frequencies, the t-tests of the significance of differences between means where there were only two groups; One-Way Analysis of Variance, and where a significant F ratio was discovered, the Newman-Keuls Test of Ordered Means to identify the pairs of means which were significantly different. A brief description of each technique in turn is supplied below.

Chi-square

This non-parametric technique is appropriate for use with nominal or ordinal data only; all of the personal and professional variables were of this nature. The technique examines the cell frequencies of a given matrix, compares the expected with the observed frequency and calculates a probability for the difference. The technique is quite robust and has only two main assumptions, (a) that of equal probability between cells, and (b) the assumptions, of a normal distribution within the samples. The available computer program includes the Yates correction for expected small cell frequencies, and this was applied as necessary. Both of the assumptions seemed likely to be met by the data

at hand, or to be within correctable limits; the additive quality of chi-square results satisfied the concern that the collapsing of groups of employment positions would mask some significant differences. This technique was utilized for the analyses comparing employment categories by personal and professional variables.

The t-Test

The decision was taken to use the parametric t-test to test the significance of differences between means when there were only two groups (Ferguson, 1966, p. 154), because the assumptions upon which the technique is based seemed likely to be met by the data at hand. Essentially there are two such assumptions. The first is that the distribution of the variables in the population from which the sample is drawn is normal. Examination of the data revealed no gross departures from normality, and as Ferguson points out, a large N will reduce any possible effects of non-normal population distributions which may exist.

> Under certain conditions the sampling distribution of means of size N, where N is large, is closely approximated by the normal distribution. This result holds regardless of the shape of the distribution in the population from which the samples are drawn . . . . The implication of this is that for large samples the non-normality of the population will not seriously affect the estimation of probabilities (Ferguson, 1966, p. 173).

The sample for at least the majority of the hypotheses was greater than N = 30, thus meeting the first assumption.

The second assumption involved in the use of a t-test is that the population variances are equal. It seemed likely

that this assumption would be met, but provision is made in the available computer programs to apply the Welch t-prime correction (Winer, 1962, p. 237) in cases of non-homogeneity. This test makes an adjustment to the degrees of freedom, so providing a correction of the t-test results. In actual practice, there were no gross departures from equality in the population variances, and the correction was not applied.

One-Way Analysis of Variance

The nature of the data, conventional wisdom and the direction of the enquiry suggested that although the basic examination would consider the effects on the mean sample scores resulting from dividing the sample along the various lines, the dichotomous variable of sex may well have an effect on all of the conceptualized groupings. This suggestion was reinforced by the fact that in the sample the entire vice-principal and principal group was male, suggesting either non-attainment of aspiration, or else non-aspiration for this kind of position by those in the female sub-sample. Accordingly, it was decided to examine the data using a One-Way Analysis of Variance by which method it is possible to extend the examination through the use of the Newman-Keuls Comparison of Ordered Means (Winer, 1962, p. 84). This test determines the origin of the differences noted.

The Analysis of Variance was the F-test, which is highly robust, though based on four assumptions. These are:

(a) there should be random sampling;

(b) the observations within groups should be normally

distributed;

(c) contributions to total variance should be additive; and

(d) variances within the groups should be approximately equal(Guilford, 1965, p. 274).

It seemed possible that these assumptions would be met by the data although no certainty existed. However, the statement by Guilford (1965) that the F-test can accommodate large differences in variance, and that even when departures from homogeneity are gross one can still proceed with analysis of variance gave confidence to the decision to use the technique. Further confirmation of the appropriateness of the technique for the data at hand was supplied by Ferguson.

> With most sets of real data the assumptions underlying the Analysis of Variance are, at best, only roughly satisfied . . . . One advantage of the analysis of variance is that reasonable departures from the assumptions of normality and homogeneity may occur without seriously affecting the validity of the inferences drawn from the data (Ferguson, 1966, p. 295).

As with the t-tests applied, post-priori examination of the data revealed that the assumptions were met, that deviations from homogeneity were not extreme, and that given the Ferguson support cited above, decisions could be substantiated.

Newman-Keuls Comparison of Ordered Means

This technique consists of an ordering of the means of the groups, followed by a separate comparison for each pair of these means. This comparison yields:

(a) a q_r statistic based on the group mean values,

(b) the ordered position of the means,

(c) the total number of groups, and

(d) the sum of the means by row and column.

The exceeding of a critical value by the q_r indicates significant differences between the two means being compared (Winer, 1962, p. 80).

III. LEVELS OF SIGNIFICANCE

Hypothesis testing requires that a level be established beyond which point statements of direction, rejection, or quantity are not considered acceptable. Though some current research avoids the issue by simply stating the findings and the probabilities, thereby leaving the reader freedom to draw his own conclusions, it was felt that in light of the nature of previous research in this area, and of the nature of the data, a significance level of 0.05 would be established for the various analyses. The value-judgement nature of responses to part of the ESAI and the broadness of the generalizations of the ensuing conclusions suggested that a more rigorous level of significance might be inappropriate.

IV. SUMMARY

This chapter reported the sources of the data, the method of data organization, and the various types of data which were stored on IBM punch cards and which formed the data of the study. The various statistical techniques used in the study were described. These comprised the Chi-square, the

t-test, One-Way Analysis of Variance, and Newman-Keuls Comparison of Ordered Means. The assumptions underlying each of these techniques were considered in turn, and the appropriateness of the use of the techniques in this study was justified. The chapter concluded with a statement of the significance levels adopted as being appropriate for the hypotheses and the nature of the data.

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CHAPTER V

ANALYSES, FINDINGS AND DISCUSSION

I. INTRODUCTION

This chapter outlines the various analyses performed on the data for each of the hypotheses in turn. The findings are documented and presented concurrently in table form where appropriate. Each section concludes with a summary of the findings. For ease of reference the chapter concludes with a re-statement of the hypotheses and the findings.

II. SUB-PROBLEM 1

The total sample consisted of a graduating class of teacher-trainees. Table 7 on page 74 shows the make-up of the total sample. Six years had elapsed since the class graduated, and for a variety of reasons the total number of active teachers had diminished; thus the sample comprised two sub-samples, the persists who were still known to be in the Alberta teaching force, and the non-persists. All that can be safely stated about this latter group is that they had not been active in the Alberta teaching force for at least two years. The problems of successfully tracing even a small number of non-persists were virtually insurmountable (Charters, 1970; Chamchuk,

1965); many females possibly had left the profession for domestic reasons such as raising a family or husband moving away from Alberta. Others, both male and female, may have left Alberta but still be teaching in some other province. An examination of the Alberta Teachers' Association active file revealed that many individuals took one year off, presumably for such reasons as family responsibilities or for a further year of academic upgrading, and then returned to active teaching. Accordingly, individuals who had been inactive for two or more consecutive years were classed as non-persists, since the indicated likelihood of these people returning is very slight. Table 8 on page 77 compares the two samples of persists and non-persists as they were drawn from the total sample.

Analysis

In any study which includes teachers and non-teachers, the first assumption to be tested must be that the two groups are in some sense different, and that, as the research of Strong (1943) and others suggests, there are identifiable differences between the teacher and non-teacher, even allowing for the grossness of the term (cf. the qualification of Strong, 1943, supra p. 22). This need for understanding of the differences existing between the two groups engendered the first problem:

> Research hypothesis 1. There will be differences between the persists and the non-persists in the Alberta teaching force when compared by personal, professional and personality variables.

A comparison of persists versus non-persists such as this entailed the use of a priori data; as already discussed, the unavailability of the non-persists made further data gathering impossible. Thus there could be no rigid selection of variables on which to base the analysis. Conventional wisdom suggested that variables dealing with biological, environmental, and professional preparation differences might reveal sources of difference between the two groups, while data referring to such matters as personal associations, anticipated university training and marital status were excluded as being too ephemeral or value-laden on the part of the respondees to be valid for purposes of statistical analysis.

Personal and Professional Variables

The two groups were compared on eleven personal and professional variables, all extant in the original Ratsoy (1965) data. These were as follows (1) age, (2) sex, (3) rural or urban home background, (4) family socio-economic status, (5) number of years in the Faculty of Education, (6) whether elementary or secondary route, (7) subject major, (8) number of courses in the major field, (9) years of teaching experience when the ESAI was completed, (10) number of years out of education between grade XII and first-year University, and (11) grade point average.

Differences between sub-groups for three of these variables were found to be significant at the 0.05 level.

These were sex, rural vs. urban home background, and family socio-economic status.

Sex. The research of Whitner (1965) suggests that there is a greater non-persistence in teaching among females than there is among males. The analysis confirms that for this particular population her findings hold true. Within five years almost 72 percent of the females were non-persists as defined for the study, whereas only 40 percent of the males were so classified. Table 9 presents the relative percentages and frequencies, and reveals that the chances of a man remaining in the Alberta teaching force after five years are more than twice that of his female peers (60 percent compared with 28 percent).

Rural vs. urban home background. The sample was divided into three groups for this analysis. Individuals who indicated a home-town population smaller than 5,000 were classified as rural, and the remainder divided between a group from large towns or the smaller cities, and Edmonton or Calgary residents. The finding, as indicated in Table 10 reveals that there is no statistically significant difference between the persists and the non-persists who came from the large cities, or from a rural home environment. For the individuals from the large towns/small city environment, however, there is more than twice the possibility of leaving the Alberta teaching force as of remaining (69 percent versus 31 percent).

TABLE 9

Comparison of Persists with Non-Persists Grouped by Sex

Groups	Males	Females	Totals	x^2 (p)
Persists	140 (60.1%)	64 (28.2%)	204 (44.3%)	47.38
Non-Persists	93 (39.9)	163 (71.8)	256 (55.7)	(beyond 0.001)
Total	233 (50.7)	227 (49.3)	460(100.0)	

TABLE 10

Comparison of Persists with Non-Persists Grouped by Home Locale

Groups	Rural	Large Town/ Small City	Edmonton/ Calgary	Totals	x^2 (p)
Persists	112 (50.0%)	24 (31.2%)	68 (42.8%)	204 (44.3%)	8.48
Non Persists	112 (50.0)	53 (68.8)	91 (57.2)	256 (55.7)	(0.014)
Total	224 (48.7)	77 (16.7)	159 (34.6)	460(100.0)	

Family socio-economic status. The sample was divided into three groups based on the self-reported comparison of the family status with the perceived teacher status. Out of a total sample of 460 as shown in Table 11, 55 reported that their family was of higher socio-economic status than the teaching profession, and 123 reported anticipating no difference between their home status and their own status when in the profession. The remaining 282 reported that their own status as teachers would be higher than that of their family. Thus, for 61 percent of the sample, becoming a teacher was considered to be an upward step in socio-economic status.

The following are relevant findings:

a) Of the people who reported a family socio-economic status higher than teachers, only 29 percent remained in the Alberta teaching force after five years.

b) Of the people who reported a family socio-economic status equal to teachers, 41 percent remained in the Alberta teaching force after five years.

c) Of the people who reported a family socio-economic status lower than that of teachers, approximately equal numbers (49 percent versus 51 percent) became persists and non-persists after five years.

At the alpha level established a priori, no other findings were statistically significant, as is shown in Table 12.

TABLE 11

Comparison of Persists with Non-Persists Grouped by Family Socio-Economic Status

Groups	Socio-Economic Status			Total	x^2 (p)
	High	Equal to Teachers	Lower than Teachers		
Persists	16 (29.1%)	50 (40.7%)	138 (48.9%)	204 (44.3%)	8.27
Non-Persists	39 (70.9)	73 (59.3)	144 (51.1)	256 (55.7)	(0.02)
Totals	55 (12.0)	123 (26.7)	282 (61.3)	460 (100.0)	

TABLE 12

Statistically Non-significant Differences
Between Persists and Non-persists

Variable	Persists	Non-persists	Total	x^2 (p)
Age:				
Under 22 yrs.	57 (27.9%)	90 (35.2%)	147 (32.0%)	3.42
22yrs. to 25yrs.	79 (38.7)	97 (37.9)	176 (38.3)	(0.18)
Over 25 yrs.	68 (33.3)	69 (27.0)	137 (29.8)	
Total	204 (44.3)	256 (55.7)	460 (100.0)	
Years in Education Faculty:				
Less than 4 yrs.	121 (59.3%)	157 (61.3%)	278 (60.4%)	0.23
4 yrs.	81 (39.7)	97 (37.9)	178 (38.7)	
More than 4 yrs.	2 (1.0)	2 (0.8)	4 (0.9)	(0.89)
Total	204 (44.3)	256 (55.7)	460 (100.0)	
Education Route:				
Elementary	42 (20.8%)	60 (23.6%)	102 (22.4%)	0.52
Secondary	160 (79.2)	194 (76.4)	354 (77.6)	(0.47)
Total	202 (44.3)	254 (55.7)	456 (100.0)	

TABLE 12 (continued)

Variable	Persists	Non-persists	Total	x^2 (p)
Major Concentration Area:				
English/Fine Arts	54 (33.1%)	78 (38.6%)	132 (36.2%)	2.81
Language/ Soc. Studies	56 (34.4)	74 (36.6)	130 (35.6)	
Science/Math	53 (32.5)	50 (24.8)	103 (28.2)	(0.25)
Total	163 (44.7)	202 (55.3)	365 (100.0)	
Number of Major-Area Courses:				
Less than 3	88 (43.1%)	100 (39.1%)	188 (40.9%)	2.83
3 to 5	59 (28.9)	93 (36.3)	152 (33.0)	
More than 5	57 (27.9)	63 (24.6)	120 (26.1)	(0.24)
Total	204 (44.3)	256 (55.7)	460 (100.0)	
Years of Teaching Experience:				
Zero years	130 (63.7%)	147 (57.4%)	277 (60.2%)	2.20
One year	15 (7.4)	26 (10.2)	41 (8.9)	
Two or more years	59 (28.9)	83 (32.4)	142 (30.9)	(0.33)
Total	204 (44.3)	256 (55.7)	460 (100.0)	

TABLE 12 (continued)

Variable	Persists	Non-persists	Total	x^2 (p)
Years Away from Education Between Grade XII and University:				
Zero years	87 (42.6%)	101 (39.5%)	188 (40.9%)	2.02
One year	22 (10.8)	39 (15.2)	61 (13.3)	
Two or more years	95 (46.6)	116 (45.3)	211 (45.9)	(0.36)
Total	204 (44.3)	256 (55.7)	460 (100.0)	
Grade Point Average:				
Less than 60	23 (11.3%)	16 (6.2%)	39 (8.5%)	5.35
60 to 69	132 (64.7)	161 (62.9)	293 (63.7)	(0.07)
70 or over	49 (24.0)	79 (30.9)	128 (27.8)	
Total	204 (44.3)	256 (55.7)	460 (100.0)	

Further Analysis

At the alpha level established a priori statistically significant findings were discovered for the three variables already discussed, viz., sex, rural versus urban home background, and family socio-economic status. Examination of the frequencies for these three suggested that because of the distribution any further analyses within the various subgroups would result in very small cell frequencies, especially for the latter two variables. Since the sample was divided almost equally between males and females, however, a secondary analysis was performed on the same ten personal and professional variables, controlling in every case for sex. The results of the comparison between persists and non-persists when so controlled are presented below.

Males. Of the eleven variables examined, the differences between the male persists and non-persists were statistically significant on only one comparison, that of the number of undergraduates courses in the subject major taken towards a degree. The various Bachelor programs allowed considerable flexibility in this regard, allowing as few as two major area courses or as many as eleven such courses in a degree program. The sample was divided into three to capitalize on these differences. The individuals who reported having taken fewer than three major courses were compared with those who reported having taken three to five courses and those who reported taking six or more major courses. Table 13 reveals that for the individuals who took

TABLE 13

Comparison of Male Persists with Non-Persists Grouped by Number of Major Concentration Area Courses

Group	Number of Courses			Total	x^2 (p)
	Fewer than 3	3 to 5	6 or more		
Persists	62 (71.3%)	35 (48.6%)	43 (58.1%)	140 (60.1%)	8.61
Non-Persists	25 (28.7)	37 (51.4)	31 (41.9)	93 (39.9)	(0.013)
Total	87 (37.3)	72 (30.9)	74 (31.8)	233(100.0)	

fewer than three major courses 71 percent remained in the Alberta teaching force. The remaining two groups were more evenly distributed; approximately equal numbers of persists and non-persists reported having taken between three and five major courses, and slightly more individuals who had taken more than five courses persisted (58 percent) than left the Alberta teaching force (42 percent).

At the selected alpha level no other statistically significant differences were revealed as is shown by the listing of the findings on Table 14.

Females. Statistically significant differences at an alpha level of 0.05 between female persists and non-persists were discovered on three variables, age, years of teaching experience, and number of years between completion of grade XII and entering University.

a) Age. The findings presented in Table 15 reveal clearly that age is related to persistence. Of the total female sample 72 percent were no longer actively employed in the Alberta teaching force five years after graduation. At the same time it was noted that 70 percent of the total sample were under twenty-five when they graduated. This prompted a closer examination of the data. Of the females under 22 years on graduation 75 percent were non-persists in the Alberta teaching force within the five year time span; of the females between 22 and 25 years at graduation from University, 80 percent were non-persists within the same period. For this sample, within the under 25 age group

TABLE 14

Statistically Non-significant Differences
Between Male Persists and Non-persists

Variable	Persists	Non-persists	Total	x^2 (p)
Age:				
Under 22	33 (23.6%)	20 (21.5%)	53 (22.7%)	0.17
22 to 25	66 (47.1)	44 (47.3)	110 (47.2)	(0.92)
Over 25	41 (29.3)	29 (31.2)	70 (30.0)	
Total	140 (60.1)	93 (39.9)	233(100.0)	
Home Town Locale:				
Rural	77 (55.0%)	39 (41.9%)	116 (49.8%)	5.26
Large town/ small city	18 (12.4)	21 (22.6)	39 (16.7)	(0.07)
Edmonton/ Calgary	45 (32.1)	33 (35.5)	78 (33.5)	
Total	140 (60.1)	93 (39.9)	233(100.0)	
Family Socio-Economic Status:				
Higher than teachers	6 (4.3%)	9 (9.7%)	15 (6.4%)	3.19
Same as teachers	31 (22.1)	23 (24.7)	54 (23.2)	(0.20)
Lower than teachers	103 (73.6)	61 (65.6)	164 (70.4)	
Total	140 (60.1)	93 (39.9)	233(100.0)	

TABLE 14 (continued)

Variable	Persists	Non-persists	Total	x^2 (p)
Years in Education Faculty:				
Less than 4 years	87 (62.1%)	61 (65.6%)	148 (63.5%)	0.31
4 years	51 (36.4)	31 (33.3)	82 (35.2)	(0.86)
More than 4 years	2 (1.4)	1 (1.1)	3 (1.3)	
Total	140 (60.1)	93 (39.9)	233 (100.0)	
Education Route:				
Elementary	21 (15.1%)	10 (10.9%)	31 (13.4%)	0.86
Secondary	118 (84.9)	82 (89.1)	200 (86.6)	(0.35)
Total	139 (60.2)	92 (39.8)	231 (100.0)	
Major Concentration Area:				
English/Fine Arts	29 (24.6%)	21 (25.9%)	50 (25.1%)	3.06
Language/ Soc. Studies	39 (33.1)	35 (43.2)	74 (37.2)	(0.22)
Science/Math	50 (42.4)	25 (30.9)	75 (37.7)	
Total	118 (59.3)	81 (40.7)	199 (100.0)	

TABLE 14 (continued)

Variable	Persists	Non-persists	Total	x^2 (p)
Years of Teaching Experience:				
Zero years	90 (64.3%)	63 (67.7%)	153 (65.7%)	0.50
One year	14 (10.0)	7 (7.5)	21 (9.0)	(0.78)
2 or more years	36 (25.7)	23 (24.7)	59 (25.3)	
Total	140 (60.1)	93 (39.9)	233(100.0)	
Years Away From Education between Grade XII and University:				
Zero years	57 (40.7%)	33 (35.5%)	90 (38.6%)	0.90
One year	21 (15.0)	13 (14.0)	34 (14.6)	(0.64)
2 or more years	62 (44.3)	47 (50.5)	109 (46.8)	
Total	140 (60.1)	93 (39.9)	233(100.0)	
Grade Point Average:				
Less than 60	19 (13.6%)	7 (7.5%)	26 (11.2%)	2.13
60 to 69	91 (65.0)	66 (71.0)	157 (67.4)	(0.35)
More than 70	30 (21.4)	20 (21.5)	50 (21.5)	
Total	140 (60.1)	93 (39.9)	233(100.0)	

TABLE 15

Comparison of Female Persists with Non-Persists Grouped by Age

Group	Age on Graduation			Total	x^2 (p)
	Under 22 yrs.	22 to 25 yrs.	More than 25 yrs.		
Persists	24 (25.5%)	13 (19.9%)	27 (40.3%)	64 (28.2%)	7.53
Non-Persists	70 (74.5)	53 (80.3)	40 (59.7)	163 (71.8)	(0.023)
Total	94 (41.4)	66 (29.1)	67 (29.5)	227(100.0)	

there was a less than one-in-four chance of a female remaining active in the Alberta teaching force for more than five years. Forty percent of the over-25's persisted.

b) Years of teaching experience before graduation. Table 7 on page 70 indicates that the population consisted in part of individuals who had had varying amounts of teaching experience. For this analysis the females were divided into three groups; (a) the females who had no teaching experience prior to entering the professional preparation program, (b) those who reported having had one year of experience, and (c) the remainder of the experienced teachers who had had more than ten years in the teaching force and who had returned to University for academic upgrading. Table 16 reveals that more than half of the total female population had had no professional teaching experience before graduation. Of these, 69 percent became non-persists within the time span of the study. More than a third of all the females had had two or more years of experience, nearly three-quarters (72 percent) of whom became non-persists. All of the experience categories have a greater proportion of non-persists than of persists.

c) Years away from education between grade XII and University. The analysis, which divided the sample into three groups, compared the females who had proceeded directly to University from High School with a second group who had had a one-year interruption between school and University, and a third group who had had a

TABLE 16

Comparison of Female Persists with Non-Persists
Grouped by Years of Teaching Experience

Group	Years of Teaching Experience			Total	x^2 (p)
	0 yrs.	1 yr.	2 or more yrs.		
Persists	40 (32.3%)	1 (5.0%)	23 (27.7%)	64 (28.2%)	6.34
Non-Persists	84 (67.7)	19 (95.0)	60 (72.3)	163 (71.8)	(0.04)
Total	124 (54.6)	20 (8.8)	83 (36.8)	227(100.0)	

two-or-more year interruption of studies. As shown in Table 17, 43 percent of the sample had proceeded directly to University; 69 percent of these became Albertan non-persists. Similarly, 45 percent of the sample had a break of two or more years in their education; 68 percent of these became Albertan non-persists. The remaining group consisted of those females who had reported a one-year break in their education. These comprised 12 percent of the total female sample, 96 percent of whom became non-persists.

At the selected alpha level no other statistically significant differences were revealed, as is shown by the listing of the findings in Table 18.

The Personality Variables

Analyses of variance were performed to compare the persists with the non-persists on the four Omnibus Personality Inventory (OPI) scales, on the five Education Profession Aspirations Scales (EPAS), and on the Education Profession Attitude Questionnaire (EPAQ). As revealed in Table 19, two of the four OPI measures and two of the EPAS measures were found to reveal statistically significant differences between persists and non-persists in the Alberta teaching force. Persists scored higher on Theoretical Orientation and lower on Estheticism than did non-persists. The second and fourth EPAS measured the optimistic aspiration of the respondents, the second in the immediate future and the fourth in ten years time. In both of those responses persists were found to have a statistically significantly higher score than the non-persists.

TABLE 17

Comparison of Female Persists with Non-Persists Grouped by the Number of Years Away From Education Between Grade XII and University

Groups	No. of Years Between Grade XII and University			Total	x^2 (p)
	None	1 yr.	2 or more yrs.		
Persists	30 (30.6%)	1 (3.7%)	33 (32.4%)	64 (28.2%)	9.15
Non-Persists	68 (69.4)	26 (96.3)	69 (67.6)	163 (71.8)	(0.01)
Total	98 (43.2)	27 (11.9)	102 (44.9)	227(100.0)	

TABLE 18

Statistically Non-significant Differences
Between Female Persists and Non-persists

Variable	Persists	Non-persists	Total	x^2 (p)
Home Town Locale:				
Rural	35 (54.7%)	73 (44.8%)	108 (47.6%)	3.84
Large town/ small city	6 (9.4)	32 (19.6)	38 (16.7)	(0.15)
Edmonton/ Calgary	23 (35.9)	58 (35.6)	81 (35.7)	
Total	64 (28.2)	163 (71.8)	227(100.0)	
Family Socio-Economic Status:				
Higher than teachers	10 (15.6%)	30 (18.4%)	40 (17.6%)	0.34
Same as teachers	19 (29.7)	50 (30.7)	69 (30.4)	(0.84)
Lower than teachers	35 (54.7)	83 (50.9)	118 (52.0)	
Total	64 (28.2)	163 (71.8)	227(100.0)	
Years in Education Faculty:				
Less than 4 years	34 (26.2%)	96 (73.8%)	130 (57.3%)	1.10
4 years	30 (31.3)	66 (68.8)	96 (42.3)	(0.58)
More than 4 years	0 (0.0)	1(100.0)	1 (0.4)	
Total	64 (28.2)	163 (71.8)	227(100.0)	

TABLE 18 (continued)

Variable	Persists	Non-persists	Total	x^2 (p)
Education Route:				
Elementary	21 (33.3%)	50 (30.9%)	71 (31.6%)	0.13
Secondary	42 (66.7)	112 (69.1)	154 (68.4)	(0.72)
Total	62 (28.0)	162 (72.0)	225(100.0)	
Major Concentration Area:				
English/Fine Arts	25 (55.6%)	57 (47.1%)	82 (49.4%)	4.58
Language/ Soc Studies	17 (37.8)	39 (32.2)	56 (33.7)	(0.10)
Science/Math	3 (6.7)	25 (20.7)	28 (16.9)	
Total	45 (27.1)	121 (72.9)	166(100.0)	
Number of Major-Area Courses:				
Less than 3	26 (40.6%)	75 (46.0%)	101 (44.5%)	0.54
3 to 5	24 (37.5)	56 (34.4)	80 (35.2)	(0.76)
More than 5	14 (21.9)	32 (19.6)	46 (20.3)	
Total	64 (28.2)	163 (71.8)	227(100.0)	
Grade Point Average:				
Less than 60	4 (6.2%)	9 (5.5%)	13 (5.7%)	0.87
60 to 69	41 (64.1)	95 (58.3)	136 (59.9)	(0.65)
More than 70	19 (29.7)	59 (36.2)	78 (34.4)	
Total	64 (28.2)	163 (71.8)	227(100.0)	

TABLE 19

ESAI Scores for the Persists Compared with the Non-persists

Variable	Persists		Non-persists		t*	p.
	Mean	SD	Mean	SD		
Thinking Introversion	56.60	13.96	54.96	15.28	1.19	0.24
Social Introversion	50.38	16.00	49.73	15.38	0.45	0.66
Theoretical Orientation	56.76	14.49	52.42	15.68	3.06	0.002
Estheticism	48.56	15.14	52.61	15.78	-2.79	0.006
EPAS 1 (realistic, present)	41.42	8.03	41.19	7.41	0.31	0.76
EPAS 2 (optimistic, present)	48.40	12.10	46.12	10.49	2.07	0.04
EPAS 3 (realistic, future)	48.14	10.14	46.45	9.43	1.78	0.08
EPAS 4 (optimistic, future)	54.03	11.60	50.43	11.41	3.23	0.001
EPAS 5 (self-appraisal)	45.83	10.89	45.43	10.47	0.39	0.70
EPAQ	56.20	17.82	54.45	15.31	1.13	0.26

*The negative sign is used to indicate the direction of the differences. All t values are positive.

Further Analysis

Earlier analyses of the demographic variables had shown the necessity for further analysis by sex. It was therefore decided to extend the analyses of the personality variables to accommodate the sex variable also. The male persists were compared with the non-persists on all of the ten personality variables, and a similar analysis was conducted for the female sample of persists and non-persists.

Males. The findings tabulated in Table 20 reveal that there were differences on all of the variables, but at the a priori alpha level only one was considered significant. The final EPAS was considered to be a measure of realistic self-appraisal. The male non-persists were found to score higher, i.e., have a higher personal evaluation of their abilities, than did the persists. It was also noted that the male persists had a higher Social Introversion score than did the non-persists; this figure did not satisfy the level of significance for this study, but was sufficiently close to warrant mention.

Females. The analysis compared the female persists with the non-persists in the ten personality variables; the non-persists were found to score significantly higher than the persists on only two of the Aspiration scores, on 'realistic present expectations' and on 'realistic future expectations.' On all other eight measures the results as shown in Table 21, did not attain the statistical level of significance.

TABLE 20

ESAI Scores for Male Persists and Non-Persists

Variable	Persists		Non-Persists			
	Mean	SD	Mean	SD	t*	p
Thinking Introversion	56.63	14.14	55.73	14.40	0.47	0.64
Social Introversion	51.32	15.71	47.32	16.74	1.86	0.06
Theoretical Orientation	60.01	13.59	58.25	15.06	0.93	0.35
Estheticism	46.54	15.71	49.36	15.66	-1.34	0.18
EPAS 1 (realistic, present)	43.46	7.72	44.27	8.24	-0.75	0.46
EPAS 2 (optimistic, present)	51.21	12.38	51.87	12.37	-0.39	0.70
EPAS 3 (realistic, future)	51.23	9.40	51.26	9.65	-0.02	0.99
EPAS 4 (optimistic, future)	57.44	10.82	57.76	11.94	-0.21	0.83
EPAS 5 (self-appraisal)	47.60	10.93	50.84	11.86	-2.10	0.04
EPAQ	56.07	17.68	53.84	15.92	0.98	0.33

*The negative sign is used to indicate the direction of the differences. All t values are positive.

TABLE 21

ESAI Scores for Female Persists and Non-Persists

Variable	Persists		Non-Persists			
	Mean	SD	Mean	SD	t*	p
Thinking Introversion	56.54	13.66	54.53	15.78	0.89	0.37
Social Introversion	48.24	16.44	51.09	14.43	-1.28	0.20
Theoretical Orientation	49.43	13.86	49.15	15.09	0.13	0.90
Estheticism	53.11	12.75	54.44	15.60	-0.60	0.55
EPAS 1 (realistic, present)	36.76	6.72	39.39	6.23	-2.69	0.008
EPAS 2 (optimistic, present)	41.86	8.40	42.75	7.38	-0.75	0.46
EPAS 3 (realistic, future)	40.65	7.73	43.50	8.00	-2.27	0.02
EPAS 4 (optimistic, future)	46.14	9.35	46.11	8.54	0.02	0.99
EPAS 5 (self-appraisal)	41.76	9.71	42.18	7.97	-0.32	0.75
EPAQ	56.48	18.27	54.79	15.00	0.71	0.48

*The negative sign is used to indicate the direction of the differences. All t values are positive.

Secondary Analysis

Even a superficial examination of the results revealed that although there were few differences between the male persists and non-persists, or between the female persists and non-persists, there appeared to be some markedly different scores between male and female persists, and between male and female non-persists. *t*-tests were therefore performed on those pairs for the ten personality variables.

Male versus female samples. The findings as presented in Tables 22 and 23 reveal a similarity which is not unexpected in light of the earlier analyses. For both the persist and for the non-persist analyses statistically significant differences were found on two of the OPI scales and on all five of the EPAS's. Males in both classes of persistence scored higher than females in Theoretical Orientation, and lower in Estheticism, while in all five EPAS's males scored significantly higher; in every case this was beyond the 0.001 alpha level. Though not attaining the established level of significance, it was also noted that female non-persists score higher than male non-persists, on Social Introversion, i.e., the females are demonstrably less extroverted than are the males in this class. The reverse is the case for the persists, where the males are seen to be the more introverted.

Discussion

The analysis for the first hypothesis considered eleven personal and professional variables, and ten

TABLE 22

ESAI Scores for Male and Female Persists

Variable	Male		Female			
	Mean	SD	Mean	SD	t*	p
Thinking Introversion	56.26	14.20	57.09	13.50	-0.15	0.88
Social Introversion	51.31	15.75	48.39	16.47	1.19	0.23
Theoretical Orientation	60.06	13.59	49.28	13.93	5.06	beyond 0.001
Estheticism	46.29	15.67	53.27	12.71	-3.21	0.002
EPAS 1 (realistic, present)	42.78	7.75	36.95	6.74	5.59	beyond 0.001
EPAS 2 (optimistic, present)	50.98	12.13	42.72	9.82	4.57	beyond 0.001
EPAS 3 (realistic, future)	51.25	9.43	40.73	7.79	7.30	beyond 0.001
EPAS 4 (optimistic, future)	57.42	10.86	46.34	9.52	6.72	beyond 0.001
EPAS 5 (self-appraisal)	47.59	10.97	41.83	9.74	3.44	beyond 0.001
EPAQ	56.21	17.67	56.22	18.43	-0.01	0.99

*The negative sign is used to indicate the direction of the differences. All t values are positive.

TABLE 23

ESAI Scores for Male and Female Non-Persists

Variable	Male		Female			
	Mean	SD	Mean	SD	t*	p
Thinking Introversion	55.73	14.40	54.53	15.78	0.60	0.55
Social Introversion	47.32	16.74	51.09	14.43	-1.90	0.059
Theoretical Orientation	58.25	15.06	49.15	15.09	4.63	beyond 0.001
Estheticism	49.36	15.66	54.44	15.60	-2.50	0.013
EPAS 1 (realistic, present)	44.27	8.24	39.39	6.23	5.22	beyond 0.001
EPAS 2 (optimistic, present)	51.87	12.37	42.75	7.38	7.21	beyond 0.001
EPAS 3 (realistic, future)	51.26	9.65	43.50	8.00	6.69	beyond 0.001
EPAS 4 (optimistic, future)	57.76	11.94	46.11	8.54	8.78	beyond 0.001
EPAS 5 (self-appraisal)	50.84	11.86	42.18	7.97	6.76	beyond 0.001
EPAQ	53.84	15.92	54.79	15.00	-0.48	0.63

*The negative sign is used to indicate the direction of the differences. All t values are positive.

personality variables. It should be noted that the measures were taken a short time before the respondents completed their period of professional preparation, but before most of them had had any involvement in the practical world of educational employment.

The personal and professional variables. Non-persistence implies the possibility of alternate employment. No assumption was made regarding the ability of the teacher or of the satisfaction or dissatisfaction derived from the role. If an individual was classed as a non-persist for the purpose of this study, it may well have been that he remained in the profession, but did not remain in Alberta. Conventional wisdom suggested that there could well have been other causes. When analyzed by family socio-economic status it was clearly apparent that the higher the family status in relation to the perceived status of the profession the less the likelihood of remaining in the Alberta teaching force. This could be a product of several factors. High family economic status may result in a greater dissatisfaction with the economic returns which accrue from teaching than is experienced by lower status individuals; the search for alternative employment prospects may be intensified under these conditions. Contact through the family may lead to increased opportunity too. A similar rationale could be applied to the findings which suggested that individuals from large towns or small cities experience a lower retention rate than their colleagues

from either rural or large city locales. The opportunity for exposure to and so awareness of alternate employment possibilities is greater in large towns than in rural areas where there are probably fewer opportunities, or large cities where the individual teacher is virtually undistinguishable from the rest of the residents. In the first case there may be few offers, while in the second case the offers may seldom be communicated except to the aggressive seeker.

The most striking finding is reflected in many of the observations. The differences between males and females are sufficiently large to warrant application to all of the subsequent analyses. A very large percentage of young females do not persist in the Alberta teaching force for more than five years. That this may be caused by similar alternate employment possibilities as for men is not refuted. Undoubtedly, too, a number of individuals, both male and female, were non-persists only in the Alberta teaching force, and in fact moved to other provinces to teach. The fact still remains that a large number of females in the younger age categories married, and subsequently appeared on the inactive Alberta Teachers' Association rolls. Chamchuk (1965) suggests a number of reasons for this, and also suggests that after the satisfaction of family commitments, a considerable number of these females return to the profession.

The further analysis controlling for sex showed that males who had few major area courses tended to remain in the

profession. These people were considered generalists; their more specialist peers may well have had a more highly developed skill to offer prospective employers, or be dissatisfied with the opportunities within the profession to use or develop these skills. Both conditions could contribute to alternative employment, or graduate work and subsequent employment in these special skill areas, contributing to non-persistence.

Three statistically significant findings for the females were observed in the analyses. Young females tended to leave the teaching force and were drawn from all categories of length of teaching experience, with one strong bias observed (Table 16, p. 110) towards those with only one year of experience prior to professional training. This bias, however, was treated with caution because of the small cell size of the category, since only 9 percent of the total female sample fell within this group. The same qualification was expressed for the third finding concerning the number of years away from education between grade XII and University. The non-persist females form the majority of each group, with a bias directed at the group who had taken a one-year absence. Since this category accounted for 12 percent of the total, and one single respondent was persisting, it seemed possible that this was a product of the sampling procedure, rather than a manifestation of statistical trends.

In all cases of significance the enormous percentage of female non-persisters tended to produce significances which could not be explained as separate conclusions on

rational grounds. The only unequivocal statement which could be made was that young females do not tend to persist in the Alberta teaching force, whereas the over 25 year category of female had a considerably greater persistence level.

The personality variables. When the persists were compared to the non-persists, statistically significant differences were found on four measures, two of the OPI measures and two of the EPAS measures.

The OPI scales have been validated and found to differentiate among various kinds of students divided accordingly to interest, major fields, academic excellence, and so on. The significant differences between means on Theoretical Orientation, on which persists scored higher than non-persists suggests that the individual who has a strong interest in scientific activities (as measured by Theoretical Orientation) is more likely to remain in education than the individual with a keen interest in artistic matters (as measured by Estheticism). Conventional wisdom suggests that the task of the classroom teacher is undoubtedly easier to adjust to for the former than the latter. Since there is a larger percentage of females than males in the non-persist sample, and a larger percentage of males than females in the persist sample, it is reasonable to suggest that the samples follow the biases of their larger sex distributions. Such is the case.

The EPAS measures indicate that although both groups see themselves in relatively equal terms as far as entering

and progressing in the profession, as revealed by the "realistic present" and "realistic future" responses, the persists have a higher aspiration for themselves. The "optimistic present" and "optimistic future" responses, while perhaps unrealistic, still show that the persists score higher than the non-persists.

A further analysis with the population divided by sex indicates a difference between the male and female responses. For the males, only one set of means was significant at the established level. Non-persist males have a higher personal opinion of their ability than do the persists. Though both groups see their respective potential in the profession in equal terms, the increased personal regard of the non-persists may well result in a higher level of dissatisfaction with the profession if this level of aspiration is not matched by achievement. This in turn, may contribute to the active search for alternate means of fulfilment, resulting in non-persistence in the Alberta professional force. The female responses show a different pattern. The two statistically significant differences revealed by the analyses were both restricted to the individuals' realistic evaluation of her employment prospects. The non-persists in both the "realistic-present" and "realistic future" hoped for, or expected to get a higher status position than the persists. There may be an indication here that some individuals have an inaccurate perception of their realistic expectations in the profession,

and so are more likely to be distressed to the point of non-persistence when these expectations are unfulfilled. The statistically non-significant difference in the "optimistic present" and "optimistic future" measures or in the self-perception measure indicate that the non-persists did not essentially regard themselves as being superior or different to the rest of the profession as represented by the persists, but yet did expect a higher employment position as a reality.

The final analyses, comparing males with females for both the persists and the non-persists seemed to reinforce the findings derived from the demographic variables analyses, especially since both groups of findings reflected the same pattern of responses. Males, both persist and non-persist, scored higher on Theoretical Orientation and on all five of the Aspiration scales, and lower on Estheticism. The OPI findings concurred with the Heist (1968) findings and thus were of no surprise. Males generally scored lower on Estheticism, perhaps because of the societal expectations for the sexes. For the same reason males tended to score higher than females on Theoretical Orientation which is defined as having a strong interest in scientific activities. That both persist and non-persist males scored higher than females on all of the Aspiration Scales was a predictable result; males are conditioned in Western societies to have aspirations related to employment, and employment possibilities in education reflect these expectations.

Summary

When persists in the Alberta teaching force are compared to non-persists along a variety of personal, professional and personality variables, statistically significant differences occurred on a number of the variables. These may be summarized as follows:

a) Females under 25 years had a 28 percent chance of remaining in the Alberta teaching force for more than five years after graduation, compared with a 60 percent chance for their male counterparts.

b) Residents of the two large cities or of rural areas showed no markedly different rates of persistence or non-persistence. Residents of large towns or the smaller cities had twice the rate of non-persistence than of persistence.

c) The higher the family socio-economic status, the less the rate of persistence. Individuals with a self-reported family socio-economic status lower than that of teachers had an even possibility of persisting or of non-persisting.

d) Males who had taken fewest courses in their principal area of concentration had a 71 percent chance of persisting. Males with six or more major area courses had a 58 percent persistence rate; those who had taken between three and five such courses had a 49 percent chance of persisting for more than five years.

e) Females who had no teaching experience before entering University had a 31 percent chance of persisting; those with one year of experience had a 5 percent chance of persisting,

and having two or more years of experience increased the probability to 28 percent.

f) A number of females proceeded directly from High School to University; 69 percent of these became non-persists within the time-span of the study. If a break of one year had occurred between school and University there was a 96 percent chance of non-persistence, while for a two or more year break the non-persistence rate was 68 percent.

g) Persists scored higher on Theoretical Orientation and lower on Estheticism than did non-persists.

h) Persist score significantly higher in both of the Aspiration scales which measure the optimistic aspiration. There was no statistically significant difference between the persists and the non-persists on the realistic aspiration measures.

j) Male non-persists scored higher on the personal assessment measure than did the persists.

k) Female non-persists scored higher on the realistic aspiration scales, both present and future, than did the persists.

l) Male persists and non-persists scored higher than their female counterparts on Theoretical Orientation, and on all five EPAS's, and lower on Estheticism.

m) There were no significant differences among any of the samples on the Education Profession Attitude Questionnaire, or on Social Introversion or Thinking Introversion.

The first hypothesis stated that "there will be differences between the persists and the non-persists in the professional Alberta teaching force when compared by personal, professional and personality variables," A number of variables were examined in each of the categories, and differences considered to be statistically significant were found on some of the variables. The remaining variables were found in each category, the hypothesis was supported in part, and was accepted.

III. CATEGORIZATION OF VARIABLES

This study was concerned with promotion and with the selection of administrators; the factors which seemed to lead to promotion, and the personality of various categories of educational practitioners, including those who had been promoted, were the subject of enquiry. As a preliminary step the similarities and differences between persists and non-persists were identified. Thereafter, it became appropriate to examine the differences which existed within the teaching force itself, and to try to account for such differences. For the examination of the remaining hypotheses the sample of teacher persists was divided into three groups according to their reported employment position. The first group were the classroom teachers who had not been promoted to administrative positions nor appointed to consultative or co-ordinating positions. The second group consisted of the individuals who in Griffiths' (1963) terms

were likely to be more subject-oriented than were classroom teachers. These were the teachers of special subjects, consultants, coordinators, and department heads. Griffiths' description of the career progression of teachers regards these individuals as being in one category, distinctly different in training, aspiration and personality to both classroom teachers and to administrators. He claims that such individuals seldom are promoted to vice-principalships. It seemed appropriate, therefore, to include all of these classifications in the second group of employment positions. The last group consisted of the individuals who had become vice-principals or principals, or had received an administrative promotion into Central Office.

A consideration of the variables which might have had a relationship with employment position and with promotion suggested that there were essentially three kinds of variables. These were:

1. The personal variables such as sex and age over which the individual had no control. The term 'biological' variable seemed too narrow to include ethnic, religious, and socio-economic differences, but these variables were included in this group, as was rural versus urban home background. In all, six personal variables were considered important enough to warrant closer examination.

2. The professional variables are taken to include aspects of professional preparation over which the individual had some control. These include the length of professional

preparation, amount of teaching experience, and academic ability as measured by the individual's college grade point average (GPA). The following were included in this class of variables: (a) years of education past grade XII, (b) number of years in the Faculty of Education, (c) whether the individual had pursued the elementary or secondary route, (d) subject major, (e) number of courses in the subject major, (f) whether teaching at the elementary, junior high, or senior high level, (g) degree held, (h) years of teaching experience, (j) number of graduate education courses, (k) GPA, (l) whether employed rurally, in a large town or small city, or in Edmonton or Calgary, (m) the urban-rural relationship between hometown and current employment. In all there were twelve professional variables considered in the analysis in this section.

3. The personality variables are taken to mean the factors included in the ESAI. These include four OPI scales, five measures of aspiration within the field of education, and EPAQ (supra p. 63).

The relationship existing between variables in each of the three categories and employment position suggested the three hypotheses, which were tested in turn.

IV. SUB-PROBLEM 2

Research hypothesis 2. There will be differences among various categories of educational practitioners when classified according to a number of personal variables.

The analysis was quite unequivocal. At the .05 alpha level only one variable revealed significant differences among the employment groups; differences were apparent when the population was compared by sex as shown in Table 24. This was not surprising in view of the nature of the distribution. Out of a sample of twenty-three principals and vice-principals there was only one female. This confirms the findings of Martin (1958: supra, p. 58). In the present population only 2 percent of the females achieved an administrative position compared with 16 percent of males who did so. Approximately the same proportion (30 percent of the males and 32 percent of the females became counsellors and consultants; 12 percent more of the female population than of the male population remained as classroom teachers, though the frequency reveals that there were fewer females in the classrooms (42 to 77). This latter statistic is a further manifestation of the high female non-persistence rate noted in the statistical analysis relevant to Hypothesis 1.

One further observation was made. The classroom teacher category accounts for 58 percent of the population of persists. However, as was shown in Table 9 on p. 89, only 44 percent of the original population remained in the Alberta teaching force. Thus, within five years of graduation from professional preparation only 26 percent of the graduates were still teaching in the classrooms of Alberta.

Of the six personal variables examined, sex was the only variable in which the differences among employment

TABLE 24

Comparison of Categories of Educational Practitioners Grouped by Sex

Group	Males	Females	Total	x^2 (p)
Teachers	77 (54.6%)	42 (66.7%)	119 (58.3%)	8.73
Coordinators, etc.	42 (29.8)	20 (31.7)	62 (30.4)	(0.01)
Vice-Principals, etc.	22 (15.6)	1 (1.6)	23 (11.3)	
Total	141 (69.1)	63 (30.9)	204(100.0)	

groups were statistically significant at the 0.05 level. The findings of the remaining five variables are reported in Table 25.

Further analysis. Sex was found to be a significant variable for the understanding of persistence versus non-persistence, and was also the only personal variable in which statistically significant differences between categories of educational practioners were identitifed. It seemed possible that there may be further differences on other variables which were being masked by the combining of the male and female scores. A further analysis was therefore conducted on the remaining five personal variables with the population divided by sex. Because there was only one female in the vice-principal category it was not possible to carry out an analysis from which inferences could realistically be drawn. The secondary analysis was therefore restricted to the male sample.

Significant differences between employment categories were identified when the male sample was classified by ethnic origin. The University "Application to Enroll" form in the early 1960's asked for the father's nationality, a question omitted from later forms. The information was classified under a number of separate nationalities, e.g., (a) Canadian, (b) U.S., (c) British, (d) German, (e) Polish, Estonian, Latvian, (f) Ukrainian, (g) Middle Eastern countries, (h) Far Eastern countries, and (j) unreported. Small cell frequencies eliminated some of the categories, and the

TABLE 25

Statistically Non-significant Findings for a Comparison of Various Categories of Educational Practitioners Grouped by Personal Variables

Variable	Teachers	Coordinators, (etc).	Principals, (etc).	Total	x^2 (p)
Age:					
Under 22 yrs.	21 (17.6%)	12 (19.4%)	3 (13.0%)	13 (17.6%)	2.36
22 to 25 yrs.	60 (50.4)	36 (58.1)	14 (60.9)	110 (53.9)	(0.67)
Over 25 yrs.	38 (31.9)	14 (22.6)	6 (26.1)	58 (28.4)	
Total	119 (58.3)	62 (30.4)	23 (11.3)	204 (100.0)	
Locale of Home:					
Rural	64 (53.8%)	33 (53.2%)	15 (65.2%)	112 (54.9%)	2.99
Large town/ small city	13 (10.9)	10 (16.1)	1 (4.3)	24 (11.8)	(0.56)
Edmonton/ Calgary	42 (35.3)	14 (30.6)	7 (30.4)	68 (33.3)	
Total	119 (58.3)	62 (30.4)	23 (11.3)	204 (100.0)	
Family Socio-Economic Status:					
Higher than teachers	11 (9.2%)	3 (4.8%)	2 (8.7%)	16 (7.8%)	2.49
Same as teachers	32 (26.9)	14 (22.6)	4 (17.4)	50 (24.5)	(0.65)
Lower than teachers	76 (63.9)	45 (72.6)	17 (73.9)	138 (67.6)	
Total	119 (58.3)	62 (30.4)	23 (11.3)	204 (100.0)	

TABLE 25 (continued)

Variable	Teachers	Coordinator, (etc).	Principal, (etc).	Total	x^2 (p)
Religious Affiliation:					
United	32 (38.6%)	14 (40.0%)	5 (29.4%)	51 (37.8%)	0.09
RC/Greek Ortho.	27 (32.5)	8 (22.9)	6 (35.3)	41 (30.4)	(0.76)
Acc/Lutheran	24 (28.9)	13 (37.1)	6 (35.3)	43 (31.9)	
Total	83 (61.5)	35 (25.9)	17 (12.6)	135 (100.0)	
Ethnic Origin:					
Canadian	50 (54.3%)	35 (71.4%)	8 (47.1%)	93 (58.9%)	8.75
British/German	20 (21.7)	9 (18.4)	7 (41.2)	36 (22.8)	(0.07)
Polish/ Ukrainian	22 (23.9)	5 (10.2)	2 (11.8)	29 (18.4)	
Total	92 (58.2)	49 (31.0)	17 (10.8)	158 (100.0)	

"unreported" category was dropped, since no practical advantage could arise from such a data source. The means and standard deviations of personality variables of the remaining categories were examined, and cells were combined with others which had a similar set of means. The final analysis thus compared (a) the sons of Canadian or U.S. fathers with (b) the sons of British or German fathers and (c) the sons of Polish or Ukrainian fathers. The other respondees were eliminated from the analysis. The sample consisted of 80 percent of the male population, and the findings are presented in Table 26.

After a pcssible five years in the profession after graduation, just over half (54 percent) of the male population were found to be still employed in the classroom. This sample of classroom teachers included 48 percent of all the Canadians' sons, 52 percent of the sons of British or German fathers, and 77 percent of Ukrainian or Polish fathers. The coordinator category included 41 percent of the Canadians' sons, 24 percent of the Britons' or Germans' sons, and 14 percent of the Poles' or Ukrainians' sons, while the category of vice-principal/principal was found to be composed of 24 percent of the sons of British or German fathers, 12 percent of the sons of Canadian fathers, and 9 percent of the sons of Polish or Ukrainian fathers.

The remaining four personal variables revealed differences among the groups which were not statistically significant at the selected level; these findings are

TABLE 26

Comparison of Employment Positions of Male Teachers Grouped by Ethnic Origin

Groups	Father's Nationality			Total	x^2
	Canadians	British/ German	Polish/ Ukrainian		
Teachers	29 (47.5%)	15 (51.7%)	17 (77.3%)	61 (54.5%)	9.90
Coordinators, etc.	25 (41.0)	7 (24.1)	3 (13.6)	35 (31.3)	(0.04)
Principals, etc.	7 (11.5)	7 (24.1)	2 (9.1)	16 (14.3)	
Total	61 (54.5)	29 (25.9)	22 (19.6)	112(100.0)	

presented in Table 27.

Discussion

The initial examination of the composition of the sample of the Alberta teaching force persists revealed very clearly the bias which existed towards male vice-principals and principals. The low number of teachers remaining in the classroom five years after graduation had already been observed. Coupled with this fact, the greater non-persistence rate of females compared to males may have been a contributory factor in the promotion of females. Given the approximately equal numbers of graduates of each sex, and the high female rate of non-persistence, it is understandable that there should be fewer females in senior positions and a greater proportion in the lower categories, since the majority do not remain in the profession long enough to be promoted. Indeed, the females who do persist achieve seniority almost as quickly as their male peers; their promotion opportunities are very nearly as great. The bias against females seemed to become operative in respect to the higher levels of promotion, rather than the first level, since 33 percent of the female persists were promoted, versus 45 percent of the male persists. The difference occurred at the vice-principal level which females rarely attained.

No valid reason could be given for the differences shown in the various categories of practitioners. The figures certainly implied that such a factor was operating. Perhaps, if administrators tend to promote those who are most

TABLE 27

Statistically Non-significant Findings for a Comparison of Male Educational Practitioners Grouped by Personal Variables

Variable	Teachers	Coordinators, (etc).	Principals, (etc.)	Total	x^2 (p)
Age:					
Under 22 yrs.	14 (18.2%)	6 (14.3%)	3 (13.6%)	23 (16.3%)	0.59
22 yrs to 25 yrs.	45 (58.4)	27 (64.3)	14 (63.6)	86 (61.0)	(0.96)
Over 25 yrs.	18 (23.4)	9 (21.4)	5 (22.7)	32 (22.7)	
Total	77 (54.6)	42 (29.8)	22 (15.6)	141(100.0)	
Locale of Home:					
Rural	45 (58.4%)	17 (40.5%)	14 (63.6%)	76 (53.9%)	5.44
Large town/ small city	10 (13.0)	7 (16.7)	1 (4.5)	18 (12.8)	(0.25)
Edmonton/ Calgary	22 (28.6)	18 (42.9)	7 (31.8)	47 (33.3)	
Total	77 (54.6)	42 (29.8)	22 (15.6)	141(100.0)	
Family Socio-Economic Status:					
Lower than teachers	3 (3.9%)	1 (2.4%)	2 (9.1%)	6 (4.3%)	1.85
Same as teachers	18 (23.4)	9 (21.4)	4 (18.2)	31 (22.0)	(0.76)
Higher than teachers	56 (72.7)	32 (76.2)	16 (72.7)	104 (73.8)	
Total	77 (54.6)	42 (29.8)	22 (15.6)	141(100.0)	
Religious Affiliation:					
United	20 (36.4%)	9 (40.9%)	5 (31.3%)	34 (36.6%)	0.87
RC/Greek Ortho	20 (36.4)	7 (31.8)	5 (31.3)	32 (34.4)	(0.93)
Acc/Lutheran	15 (27.3)	6 (27.3)	6 (37.5)	27 (29.0)	
Total	55 (59.1)	22 (23.7)	16 (17.2)	93(100.0)	

like themselves, and if there are proportionately more administrators with Canadian and British ancestors than those of Polish or Ukrainian extraction, then the bias may well be a fact, since no other single variable revealed a significant difference among the practitioners. One further speculation which may account in part for the finding is that by definition the sons of Poles and Ukrainians were first-generation Canadians, and thus may still have been reflecting the older European regard for "the schoolmaster". Economically their parents may be established, though the frequency of the self-reported lower socio-economic strata in the sample belied that speculative observation. If the sons of Poles and Ukrainians held the profession in higher regard than the other nationalities, then perhaps their aspiration to seek out advancement had not been whetted within the short time-span of this study. Pending further longitudinal research, these observations must remain highly speculative.

Summary

The second hypothesis suggested that there were differences among educational practitioners when classified according to six personal variables. These were: (a) sex, (b) age, (c) self-reported parental socio-economic status, (d) ethnic background as indicated by the nationality of the father, (e) rural versus urban home background, and (f) religious persuasion. Differences were found for the whole population on the sex variable, with a considerably

greater proportion of males employed in the principals' category than were females. Further analysis of the male sample indicated that the sons of Polish or Ukrainian fathers tended to be employed as classroom teachers, while the sons of Canadians, Britons and Germans had a greater likelihood of being employed as consultants or as vice-principals/ principals within the time-span of the study. On the positive findings of these two variables, the second hypothesis was accepted in part.

V. SUB-PROBLEM 3

Research hypothesis 3. There will be differences among various categories of educational practitioners when classified according to a number of professional variables.

The sample was again divided into three employment categories for this analysis, (a) the classroom teachers, (b) the individuals who had been appointed coordinators, counsellors, special-subject specialists, or department heads, and (c) vice-principals, principals and Central Office administrative staff; the professional variables were examined in turn for each of these categories.

There were twelve professional variables on which data were available, and they were considered to relate in part to the nature of the professional preparation undergone, and in part to the nature of the subsequent teaching experience. The variables related to the preparation included (a) number of years of education beyond grade XII, (b) number of years in the Faculty of Education, (c)

whether trained on the elementary or secondary route, (d) the subject major, (e) the number of courses taken in the subject-major area, (f) the number of degrees held, (g) the number of graduate education courses, and (h) academic ability as measured by self-reported college grade-point average (GPA). In addition the following four variables were considered to be related to the nature of the employment experience; (j) the number of years of teaching experience, (k) whether teaching at the elementary, junior high, or senior high school level, (l) whether employed by a rural, a large town/small city, or an Edmonton or Calgary school board, and (m) the urban-rural relationship between hometown and current employment locale.

At the alpha level established a priori statistically significant differences among the various employment categories were revealed for six of the variables. These were (a) number of years of education beyond grade XII, (b) number of degrees held, (c) number of graduate education courses completed, (d) number of years teaching experience, (e) whether employed in a rural or urban setting, and (f) the urban-rural relationship between hometown and current employment locale.

Number of years of education beyond grade XII. The nature of professional preparation at the University of Alberta was such that it was possible to enter the teaching force through a variety of programs. For the population used in

Student Attitude Inventory responses of fourth year classes were used for the raw data of the study. Therefore all of the sample had had four years at University. Some individuals, however, had already completed one degree, generally a B.A. or a B.Sc., and were in process of completing the additional requirements for a B.Ed. These professionals were thus in their fifth or sixth year of University. Salary scales in the province of Alberta provided for salary increments based on years of University education, in some cases up to a maximum of seven years education. There was thus a considerable incentive for teachers to attend Summer School or Evening Credit programs working on graduate or enrichment programs; in either case increases in years of education would accrue. The final possibility was that individuals may have returned to University for full-time graduate study, and thus have increased their total of education, at the same time restraining their years of teaching experience. The variables examined were expected to tap these various differences in the preparation and experience of the population.

Findings. A large part of the population (42 percent) were found to have more than the minimum first-degree education requirements. Fewer of these people (49 percent) were employed as classroom teachers than were the individuals with less education. Similarly, more of these individuals who had more than minimum degree requirements were employed in the coordinator category (39 percent) than were individuals

with lesser amounts of education (26 percent and 15 percent respectively). Only 58 percent of the total sample were still employed in the classroom. Even within the short time-span of the study 42 percent of the sample had achieved some sort of upward mobility, and were now employed either in coordinator/counselling roles, or in administration.

Further analysis. The findings in the first two analyses had both revealed the effect of grouping the sexes in masking statistically significant results. A secondary analysis was therefore performed on the same professional variables for the males and for the females. The male analysis revealed no statistically significant findings on the variable of number of years of education beyond grade XII. For the female analysis it was noted in Table 29, that, notwithstanding the small and zero cell frequencies, a positive trend was apparent which was not statistically significant in the male analysis in Table 30. The category of female coordinator/consultant was comprised of none of the minimally educated females, 23 percent of the single-degree females, and 63 percent of the single-degree females with five or more years of education.

Discussion. For females who were concerned with promotion there seemed to be advantages in gaining more than the nominal degree requirements, since only 38 percent of the individuals in the highest educational category were still in the classroom versus 77 percent of the individuals

TABLE 28

Comparison of Educational Practitioners Grouped by Years of Education Beyond Grade XII

Groups	Years of Education Beyond Grade XII			Total	x^2 (p)
	Less than 4 yrs.	4 yrs.	5 yrs. or more		
Teachers	7 (53.8%)	70 (66.0%)	42 (49.4%)	119 (58.3%)	11.21
Coordinators, etc.	2 (15.4)	27 (25.5)	33 (38.8)	62 (30.4)	(0.02)
Principals, etc.	4 (30.8)	9 (8.5)	10 (11.8)	23 (11.3)	
Total	13 (6.4)	106 (52.0)	85 (41.7)	204 (100.0)	

TABLE 29

Comparison of Female Educational Practitioners Grouped by Years of Education Beyond Grade XII

Groups	Years of Education Beyond Grade XII			Total	x^2 (p)
	Less than 4 yrs.	4 yrs.	5 yrs. or more		
Teachers	3 (75.0%)	33 (76.7%)	6 (37.5%)	42 (66.7%)	24.50
Coordinators, etc.	-	10 (23.3)	10 (62.5)	20 (31.7)	(beyond 0.001)
Principals, etc.	1 (25.0)	-	-	1 (1.6)	
Total	4 (6.3)	43 (68.3)	16 (25.4)	63(100.0)	

TABLE 30

Comparison of Male Educational Practitioners Grouped by Years of Education Beyond Grade XII

Groups	Years of Education Beyond Grade XII			Total	x^2 (p)
	Less than 4 yrs.	4 yrs.	5 yrs. or more		
Teachers	4 (44.4%)	37 (58.7%)	36 (52.2%)	77 (54.6%)	3.01
Coordinators, etc.	2 (22.2)	17 (27.0)	23 (33.3)	42 (29.8)	(0.56)
Principals, etc.	3 (33.3)	9 (14.3)	10 (14.5)	22 (15.6)	
Total	9 (6.4)	63 (44.7)	69 (48.9)	141(100.0)	

with minimal degree requirements. At the same time, for this sample, the possesion of at least minimum degree requirements was seen as an imperative pre-requisite for promotion to the coordinator category, since none of the individuals with minimal years of education were employed in that category. The findings must be viewed with caution, however, in view of the small cell frequencies .

Number of degrees held. The sample was divided into three groups for this analysis. The first group consisted of individuals who held one bachelor's degree of any kind; the second group consisted of individuals who held two bachelor degrees. Within the parameters of this study this meant the holders of a B.Ed. degree invariably taken as a second degree after a B.A. or a B.Sc. Holders of the B.P.Ed degree and a Diploma of Education were also included in this group. The final category consisted of holders of a Master's degree.

Findings. The employment category of classroom teacher was composed of 63 percent of the single Bachelor holders, 58 percent of the double Bachelor holders, and 14 percent of the Master's degree holders. The combined categories of coordinator/consultants plus the vice-principals/principals was comprised of 37 percent of the single degree holders, 42 percent of the double bachelor holders, and 86 percent of the holders of Master's degrees. Table 31 reveals the findings in full.

TABLE 31

Comparison of Educational Practitioners Grouped by Number of Degrees Held

Group	Number of Degrees			Total	x^2 (p)
	Bachelors	Two Bachelors	Master's		
Teachers	91 (62.8%)	26 (57.8%)	2 (14.3%)	119 (58.3%)	14.24
Coordinators, etc.	38 (26.2)	16 (35.6)	8 (57.1)	62 (30.4)	(0.01)
Principals, etc.	16 (11.0)	3 (6.7)	4 (28.6)	23 (11.3)	
Total	145 (71.1)	45 (22.1)	14 (6.9)	204 (100.0)	

TABLE 32

Comparison of Female Educational Practitioners Grouped by Number of Degrees Held

Group	Number of Degrees			Total	x^2 (p)
	Bachelor	Two Bachelors	Master's		
Teachers	38 (73.1%)	4 (57.1%)	-	42 (66.7%)	10.18
Coordinators, etc.	13 (25.0)	3 (42.9)	4(100.0)	20 (31.7)	(0.04)
Principals, etc.	1 (1.9)	-	-	1 (1.6)	
Total	52 (82.5)	7 (11.1)	4 (6.3)	63(100.0)	

TABLE 33

Comparison of Male Educational Practitioners Grouped by Number of Degrees Held

Group	Number of Degrees			Total	x^2 (p)
	Bachelor	Two Bachelors	Master's		
Teachers	55 (57.0%)	22 (57.9%)	2 (20.0%)	77 (54.6%)	8.51
Coordinators, etc.	25 (26.9)	13 (34.2)	4 (40.0)	42 (29.8)	(0.07)
Principals, etc.	15 (16.1)	3 (7.9)	4 (40.0)	22 (15.6)	
Total	93 (66.0)	38 (27.0)	10 (7.1)	141(100.0)	

Further analysis. The analysis by sex revealed statistically significant differences within the female sample, but not within the male practitioners. A comparison of both sets of findings clearly revealed the differences in level of educational qualification which exist between the sexes. The relevant findings, presented in Tables 32 and 33, reveal that the males who had remained in the Alberta teaching force for five years were generally more qualified than their female peers. Combining the categories of the holders of two bachelor degrees and Master's degree holders reveals that 34 percent of the male sample was accounted for versus 17 percent of the female sample. All of the female Master's degree holders were employed in the coordinator/consultant category. This contrasts with 80 percent of the male population in one of the two categories of promotees. The presence of only one female vice-principal results in blank cells; the fact that she has minimal degree requirements cannot be considered indicative of the female sample. However, it was noted that 73 percent of the female holders of one degree were employed in the classroom; only 57 percent of men in the same category were so employed.

Discussion. The variable of years of education beyond grade XII is related to the number of degrees held, since the degree is in some measure a reflection of the time spent in earning it. It is natural, therefore, that the findings from this analysis should support those of the previous variable.

There was a marked bias noted in the employment categories by the number of degrees. The possibility of moving from classroom teaching into one of the other employment categories was markedly increased for the holders of two bachelors, and even more so for the holders of a Master's degree. If 'advancement' in the profession is equated with financial return, as the survey of rate-of-return studies by Blaug (1969) implies, then there appears to be substantiation for the popular belief that increased amounts of education pay off, within the parameters of this profession and the observed extent of education.

Number of graduate education courses taken. Since the total population was in the undergraduate program when the initital measures were taken, any graduate courses must have been added since that time; the graduate diplomas usually require four completed courses, while a Master's degree calls for more courses, a thesis, and residency. Therefore the decision was made to separate the groups at the four course level. Group one consisted of the individuals who had not pursued graduate work (N=139), group two of those who had completed four or fewer graduate courses (N=49), and the third group consisted of those individuals who had completed five or more courses (N=16) and thus were presumably past the diploma level and on the way towards or had already completed an M.Ed.

Findings. Individuals who had not completed any graduate education courses tended to be employed as classroom teachers, as is revealed in Table 34. This employment category was comprised of 69 percent of the individuals with no graduate work, 39 percent of those with four or fewer courses, and 25 percent of those with more than four courses. This latter cell however consisted of four people from a total population of 204. The coordinator category showed a similar relationship between number of courses and employment; the individuals in this employment category consisted of 22 percent of the individuals who had taken no graduate work, 43 percent of those who had some graduate courses, and 69 percent of the individuals who had completed five or more graduate courses. The trend was not as consistent in the employment category which included vice-principal and principals. There were 9 percent of the individuals with no graduate courses in this employment category, 18 percent of those with fewer than five courses, and 6 percent (one individual) of the group with five or more courses.

Further analysis. Of all the professional variables examined this was the only variable in which the analysis by sex failed to reveal different relationships for the two samples. Both male and female findings were significant, as is shown in Tables 35 and 36 and the further elaboration of the findings would fail to add to the initial exposition.

TABLE 34

Comparison of Educational Practitioners Grouped by Number of Graduate Courses Completed

Group	Number of Completed Courses			Total	x^2 (p)
	None	One to four	Five or more		
Teachers	96 (69.1%)	19 (38.8%)	4 (25.0%)	119 (58.3%)	25.81
Coordinators, etc.	30 (21.6)	21 (42.9)	11 (68.8)	62 (30.4)	(beyond 0.001)
Principals, etc.	13 (9.4)	9 (18.4)	1 (6.2)	23 (11.3)	
Total	139 (68.1)	49 (24.0)	16 (7.8)	204 (100.0)	

TABLE 35

Comparison of Female Educational Practitioners Grouped by Number of Graduate Courses Completed

Group	Number of Completed Courses			Total	x^2 (p)
	None	One to four	Five or more		
Teachers	35 (79.5%)	6 (37.5%)	1 (33.3%)	42 (66.7%)	12.52
Coordinators, etc.	9 (20.5)	9 (56.3)	2 (66.7)	20 (31.7)	(0.01)
Principals, etc.	-	1 (6.2)	-	1 (1.6)	
Total	44 (69.8)	13 (25.4)	3 (4.8)	63(100.0)	

TABLE 36

Comparison of Male Educational Practitioners Grouped by Number of Graduate Courses Completed

Group	Number of Completed Courses			Total	x^2 (p)
	None	One to four	Five or more		
Teachers	61 (64.2%)	13 (39.4%)	3 (23.1%)	77 (54.6%)	16.85
Coordinators, etc.	21 (22.1)	12 (36.4)	9 (69.2)	42 (29.8)	(0.001)
Principals, etc.	13 (13.7)	8 (24.2)	1 (7.7)	22 (15.6)	
Total	95 (67.4)	33 (23.4)	13 (9.2)	141(100.0)	

Discussion. The number of graduate courses taken by any individual is positively related to the number of years of education beyond grade XII, and to the number of degrees held. The findings from the analysis of this variable gave support to the earlier findings, and served to strengthen the assumptions of intercorrelation between the three variables. These assumptions are supported in the correlation matrices in Appendix B.

Number of years of teaching experience. The sample consisted of the graduating class of the Faculty of Education in 1965, and a large percentage (75 percent) taught from that time until the date of this study. Some had already had some teaching experience prior to entering the final University year, however (supra, Table 8, p. 47), and others did not immediately leave academae or else had returned for a period since graduation. The population was grouped in such a way as to maximize these three distinctions. The first group (N=52) had had less than five years of experience implying either a late start or a subsequent return to college; the second group had five years of experience (N=91) and so had taught steadily since graduation, and the final group had more than five years of experience (N=61). Members of this latter group had already had teaching experience before the measures were taken in 1965.

Findings. There is a negative correlation between the two employment categories of coordinator/consultant and vice-principal/principal and years of experience as is shown in Table 37. The former category consists of 40 percent of the individuals who had had less than four years of experience, 31 percent of those with five years of experience, and 21 percent of the individuals with more than five years experience. With a contrary trend apparent, the principals' category consisted of 6 percent of the most inexperienced individuals, 8 percent of the individuals with five years of experience, and 21 percent of those individuals who had had more than five years of experience.

Further analysis. Statistically significant findings were revealed in the male analysis by employment category, as shown in Table 39, but not in the female analysis as shown in Table 38. The relationships between experience and employment position noted for the total population were even more pronounced in the male sample; since a large proportion of the coordinators and principals were males, the frequencies in the various categories remained similar, while the smaller total N gave rise to increased percentages. The coordinator/consultant category was made up of 41 percent of the males with less than five years experience, 32 percent of those with only five years experience, and 17 percent of the most experienced group who had had six or more years of experience in the profession. This compared with the category of vice-principals and principals which consisted of 6 percent

TABLE 37

Comparison of Educational Practitioners Grouped by Years of Teaching Experience

Group	Years of Experience			Total	x^2 (p)
	4 yrs. or less	5 yrs	6 yrs. or more		
Teachers	28 (53.8%)	56 (61.5%)	35 (57.4%)	119 (58.3%)	11.60
Coordinators, etc.	21 (40.4)	28 (30.8)	13 (21.3)	62 (30.4)	(0.02)
Principals, etc.	3 (5.8)	7 (7.7)	13 (21.3)	23 (11.3)	
Total	52 (15.5)	91 (44.6)	61 (29.9)	204 (100.0)	

TABLE 38

Comparison of Female Educational Practitioners Grouped by Years of Teaching Experience

Group	Years of Experience			Total	x^2 (p)
	4 years or less	5 years	6 years or more		
Teachers	10 (55.6%)	19 (73.1%)	13 (68.4%)	42 (66.7%)	3.48
Coordinators, etc.	7 (38.9)	7 (26.9)	6 (31.6)	20 (31.7)	(0.48)
Principals, etc.	1 (5.6)	-	-	1 (1.6)	
Total	18 (28.6)	26 (41.3)	19 (30.2)	63(100.0)	

TABLE 39

Comparison of Male Educational Practitioners Grouped by Years of Teaching Experience

Group	Years of Experience			Total	x^2 (p)
	4 years or less	5 years	6 years or more		
Teachers	18 (52.9%)	37 (56.9%)	22 (52.4%)	77 (54.6%)	13.54
Coordinators, etc.	14 (41.2)	21 (32.3)	7 (16.7)	42 (29.8)	(0.01)
Principals etc.	2 (5.9)	7 (10.8)	13 (31.0)	22 (15.6)	
Total	34 (24.1)	65 (46.1)	42 (29.8)	141(100.0)	

of the least experienced group, 11 percent of the individuals who had had five years of experience, and 31 percent of the males in the sample who had had six or more years of experience. The low and zero frequencies apparent in the results of the analysis of the female sample prevented any patterns of response being observed.

Discussion. The four preceeding variables of (a) the number of years of education beyond grade XII, (b) the number of degrees held, (c) the number of graduate education courses taken and (d) the number of years of teaching experience were all inter-related through the effect of time. It was noted that the first three variables were all different measures of the academic preparation of the individual. Since this study was concerned with a discrete time-span of graduation to five years later, it was apparent that generally speaking increased qualifications correlated with decreased experience, since there could not be time for both simultaneously. The main exceptions to this were the experienced teachers who had returned for academic upgrading and were sampled with the inexperienced fourth year education students in the original Ratsoy study. Of the males who reported more than five years of experience, 47 percent were no longer classroom teachers. Since in terms of the total population this category represents the experienced teacher who returned for academic upgrading, and since there are salary adjustments attached to all of the second and third category employment positions, the expense of returning to

University was showing financial dividends over and above the added increments for almost half of the male population.

The warning sounded earlier and supported by the matrices in Appendix B concerning inter-correlation of training and experience must be reiterated before any conclusions are drawn from these data regarding career progressions. In this particular population, all of whom gained their first degree at most five years before this study was undertaken, there are few administrators; years of experience are negatively correlated with graduate qualifications for this population. It therefore seems logical to assume that the advantage of added qualifications needs time to make itself felt on the make-up of the administrator sample, and that there has not yet been sufficient time for this to happen. However, since experience is not such an important criterion in the category of employment positions which encompassed the coordinators and consultants, the most qualified individuals appear to move into these positions more readily. There is some implication here that it is possible to be appointed to a coordinator-consultant position with minimal experience, but not to the administrator category. The percentages imply that there may be a typical correct progression from classroom teacher through the coordinator-consultant category to administrative appointments. No data are available to follow the implication that the administrators are drawn from the ranks of the coordinators. Griffiths' (1963) and Bidwell (1965) are very clear that this

is not the case. Perhaps a different promotion route is followed in the Alberta setting. These data suggest one major generalization; proportionately more administrators have more experience than either of the other categories.

Locale of employment. The population centers in Alberta seem to fall into three distinct categories. The two major cities are so alike in size and educational organization, but so distinct from the rest of the province that they must be considered as one group. At the other extreme there are many areas with populations of less than 5,000 which may be considered rural. The larger towns and smaller cities fall between these extremes, and so constitute a third group.

Findings. A larger proportion of rurally employed individuals were found in the principals' category than in any other sample. The employment category of vice-principals and principals was composed of 28 percent of the rural employees, 8 percent of the large town/small city employees, and 6 percent of the sample employed in Edmonton or Calgary. The relevant figures for the coordinator/consultant category as shown in Table 40, indicated that there were 11 percent of the rural employees, 50 percent of the large town employees, and 34 percent of the city employees in that category. There were proportionately fewer classroom teachers in the large towns (42 percent) than in either the rural settings (62 percent) or the large cities (58 percent).

TABLE 40

Comparison of Educational Practitioners Grouped by Type of Employing Board

Group	Type of Board			Total	x^2 (p)
	Rural	Large town/ Small city	Large City		
Teachers	29 (61.7%)	10 (41.7%)	80 (60.2%)	119 (58.3%)	25.54
Coordinators, etc.	5 (10.6)	12 (50.0)	45 (33.8)	62 (30.4)	(beyond 0.001)
Principals, etc.	13 (27.7)	2 (8.3)	8 (6.0)	23 (11.3)	
Total	47 (23.0)	24 (11.8)	133 (65.2)	204 (100.0)	

Further analysis. Though the comparisons of the females did not prove significant as shown in Table 41, the male sample figures reported in Table 42 were of interest in examining the coordinator and the administrator categories. While 35 percent of the male coordinators were employed in Edmonton or Calgary, only 7 percent were employed by rural boards. However, 59 percent of all the male administrators in the sample were employed by rural boards. There were 34 percent of the rural employees in the principals' employment category, compared with 9 percent of the employees of both of the other two types of boards. These latter types, however, the large city and the large town boards, employed many more of their staff as coordinators if this sample was representative of their teaching force. Only 8 percent of the rural employees were employed as coordinators/consultants, compared with 48 percent of the large town employees and 35 percent of the large city employees. The zero and small frequencies in various cells renders it indefensible to suggest any pattern of distribution for the female sample.

Discussion. In view of the generally short experience span of the sample, these findings suggest that there was a more rapid rate of promotion to administrator in a rural setting than in the cities, indicating additional differences in organizational structure between the two types of boards. That 34 percent of the sample who worked for rural boards should be administrators also had implications about the persistence of teachers in rural settings which could not be

TABLE 41

Comparison of the Female Educational Practitioners
Grouped by Type of Employing Board

Group	Type of Board			Total	x^2 (p)
	Rural	Large town/ Small city	Large City		
Teachers	7 (77.8%)	0	35 (66.0%)	42 (66.7%)	2.75
Coordinators etc.	2 (22.2)	1 (100.0)	17 (32.1)	20 (31.7)	(0.60)
Principals etc.	0	0	1 (1.9)	1 (1.6)	
Total	9 (14.3)	1 (1.6)	53 (84.1)	63(100.0)	

TABLE 42

Comparison of the Male Educational Practitioners
Grouped by Type of Employing Board

Group	Type of Board			Total	x^2 (p)
	Rural	Large town/ Small city	Large City		
Teachers	22 (57.9%)	10 (43.5%)	45 (56.3%)	77 (54.6%)	21.54
Coordinators etc.	3 (7.9)	11 (47.8)	28 (35.0)	42 (29.8)	(beyond 0.001)
Principals etc.	13 (34.2)	2 (8.7)	7 (8.7)	22 (15.6)	
Total	38 (27.0)	23 (16.3)	80 (56.7)	141(100.0)	

analysed sufficiently with the data in hand. If there was a recruiting problem for the rural systems, and an obvious urban drift, seniority and aspiration to administrative positions would be more readily rewarded in the rural settings than in other types of system where persistence and longevity were the rule rather than the exception. Clearly the opportunity for administrative promotion is greater in rural areas, perhaps because of the larger number of smaller schools. In the large cities the presence of very large schools open up more vice-principal positions, thus explaining the 35 percent of the administrators being located in the cities. The sheer size of the city systems probably explains why a large percentage (73 percent) of the consultant category are employed there. In rural systems, there are few oportunities for consultants or department heads. Only 11 percent of the rural population is so employed. The final point to be made here is probably a measure of the span of control of the various sizes of systems. As revealed by the percentages in Table 40, p. 164, in the cities 40 percent of the sample are not employed in the classroom; this figure rises to 58 percent non-teachers in the smaller urban centers, and is only 38 percent in the rural areas. On the basis of this sample a degree holder has a greater likelihood of being promoted into a specialist administrative position in an urban non-city system than in either of the other types of system.

The urban-rural relationship of home background and employment. The home background for all of the sample can be classified as rural or as urban, meaning any centre with a population of more than 10,000. Similarly, the type of the employing board can be classified. Combining the home and employment locales results in a classification which encompasses the four possibilities. These are:

(a) a rural home origin and a rural present employing board,

(b) a rural home origin and an urban present employing board,

(c) an urban home origin and an urban present employing board, and

(d) an urban home origin and a rural present employing board.

The percentage of the total as shown in Table 43 reveals that three of the possible combinations are similar, but the urban home to rural employment category is considerably smaller than the other categories.

Findings. The urban drift suggested by the findings of the previous analysis were confirmed by the present analysis. Although 61 percent of the sample had a rural home background, only 36 percent of the sample chose to work for a rural board. Table 43 reveals that the employment category of classroom teacher was drawn approximately equally from all four home/employed groupings. The category of

TABLE 43

Comparison of Educational Practitioners Grouped by the Relationship of Rural-Urban Background and Rural-Urban Employment

Groups	Home Background - Present Employment				Total	x^2 (p)
	Rural-Rural	Rural-Urban	Urban-Urban	Urban-Rural		
Teachers	30 (56.6%)	41 (57.7%)	38 (63.3%)	10 (50.0%)	119 (58.3%)	12.65
Coordinators, etc.	11 (20.8)	26 (36.6)	18 (30.0)	7 (35.0)	62 (30.4%)	(0.05)
Principals, etc.	12 (22.6)	4 (5.6)	4 (6.7)	3 (15.0)	23 (11.3)	
Total	53 (26.0)	71 (34.8)	60 (29.4)	20 (9.8)	204 (100.0)	

vice-principal/principal is composed of 23 percent of the rural home/rural employment individuals, 15 percent of the urban home/rural employment category, and approximately equal proportions (6 and 7 percent) of the rural/urban and urban/urban categories.

Further analysis. The effects of the rural-to-urban drift became rather more apparent when the analysis was repeated on the female and male samples separately as is shown in Tables 44 and 45. There were 60 percent of the male sample who had a rural home background, but only 43 percent were employed by rural boards, five years after graduation. The movement was even more marked in the female sample where 62 percent had a rural home background but only 19 percent were located with rural boards within five years of graduation. The final finding observed was that 55 percent of the male vice-principal/principal employment category came from a rural home and were still working in a rural setting, and 69 percent of all of this male category were employed by rural boards.

Discussion. The proportionately large number of vice-principals/principals employed by rural boards, and the reverse proportion of large numbers of coordinators/ consultants employed by urban boards was noted. This may have been a product of a system size and could be taken as an added indication of organizational differences between urban and rural systems. Moreoever, it served to validate

TABLE 44

Comparison of Female Educational Practitioners Grouped by the Relationship of Rural-Urban Home Background and Rural-Urban Employment

Group	Home Background - Present Employment				Total	x^2 (p)
	Rural-Rural	Rural-Urban	Urban-Urban	Urban-Rural		
Teachers	6 (60.0%)	14 (48.3%)	20 (90.9%)	2 (100.0%)	42 (66.7%)	11.89
Coordinators, etc.	4 (40.0)	14 (48.3)	2 (9.1)	0	20 (31.7)	(0.65)
Principals etc.	0	1 (3.4)	0	0	1 (1.6)	
Total	10 (15.9)	29 (46.0)	22 (34.9)	2 (3.2)	63 (100.0)	

TABLE 45

Comparison of Male Educational Practitioners Grouped by the Relationship of Rural-Urban Home Background and Rural-Urban Employment

Group	Home Background - Present Employment				Total	x^2 (p)
	Rural-Rural	Rural-Urban	Urban-Urban	Urban-Rural		
Teachers	24 (55.8%)	27 (64.3%)	18 (47.4%)	8 (44.4%)	77 (54.6%)	13.27
Coordinators, etc.	7 (16.3)	12 (28.6)	16 (42.1)	7 (38.9)	42 (29.8)	(0.04)
Principals, etc.	12 (27.9)	3 (7.1)	4 (10.5)	3 (16.7)	22 (15.6)	
Total	43 (30.5)	42 (29.8)	38 (27.0)	18 (12.8)	141 (100.0)	

some of the findings of Gill (1967) who found a significant and positive relationship between system size and the appearance of a variety of staff positions. Mention was made in the analyses for the preceding professional variables of the scarcity of females in the vice-principal employment category, and now also of the scarcity of females from this study who were working for rural boards. Yet the majority of the vice-principal positions in this study were found to be located in rural settings. This lack of articulation between females and job locales must operate against them if they do indeed aspire to such administrative appointments; the results obtained in a recent study suggest that a number of females do so aspire (Tronc, 1969, p. 141).

Summary

The third research hypothesis postulated that there would be differences among various categories of educational practitioners when classified according to a number of professional variables. The twelve variables selected for analysis consisted of eight variables related to professional preparation, and four variables related to professional experience. Statistically significant differences were revealed on six of the variables. These were:

(a) the number of years of education beyond grade XII,

(b) the number of degrees held,

(c) the number of graduate education courses completed,

(d) the number of years of teaching experience,

(e) whether employed by a rural or an urban board, and

(f) the urban-rural relationship between hometown origin and current employment locale.

The variables were analysed for the total sample, and a further analysis was carried out with the sample divided by sex. The findings were discussed in turn; the statistically non-significant findings are presented in Table 46.

Six of the professional variables revealed statistically significant differences between the various categories of educational practitioners; these variables encompassed aspects both of professional preparation and of experience. The third hypothesis was therefore accepted in part.

VI. SUB-PROBLEM 4

Research hypothesis 4. There will be differences in personality among various categories of educational practitioners.

Unlike the data on which the previous analyses were carried out, the data used to test this hypothesis consisted of ten scores to test items on the ESAI. Non-parametric statistical techniques were considered inappropriate for use with these kind of data; instead, the analysis of variance technique was applied. Since personality has been defined for the purpose of this study as a composite of the OPI scales, the EPAS, and the EPAQ, each of these ten variables was examined consistently throughout the analyses. The initial examination called for a comparison of the scale

TABLE 46

Statistically Non-Significant Findings of the Comparison of Various Categories of Educational Practitioner Grouped by Professional Variables

Variable	Teachers	Coordinators, etc.	Principals, etc.	Total	x^2 (p)
Number of Years in the Faculty of Education:					
3 or fewer years	50 (42.0%)	29 (46.8%)	7 (30.4%)	86 (42.2%)	3.30
4 years	67 (56.3)	33 (53.2)	16 (69.6)	116 (56.9)	
More than 4 years	2 (1.7)	0	0	2 (1.0)	(0.51)
Total	119 (58.3)	62 (30.4)	23 (11.3)	204 (100.0)	
Education Route:					
Elementary	22 (18.6%)	13 (21.3%)	7 (30.4%)	42 (20.8%)	1.64
Secondary	96 (81.4)	48 (78.7)	16 (69.6)	160 (79.2)	
Total	118 (58.4)	61 (30.2)	23 (11.4)	202 (100.0)	(0.44)
Major Subject Area:					
English/ Fine Arts	34 (33.7%)	15 (34.1%)	5 (27.8%)	54 (33.1%)	0.44
Social St./ Language	35 (34.7)	15 (34.1)	6 (33.3)	56 (34.4)	
Math/Science	32 (31.7)	14 (31.8)	7 (38.9)	53 (32.5)	(0.98)
Total	101 (62.0)	44 (27.0)	18 (11.0)	163 (100.0)	

TABLE 46 (continued)

Variable	Teachers	Coordinators, etc.	Principals, etc.	Total	x^2 (p)
Number of Courses in Major Area:					
3 or fewer	48 (40.3%)	26 (41.9%)	14 (60.9%)	88 (43.1%)	6.42
4 courses	40 (33.6)	14 (22.6)	5 (21.7)	59 (28.9)	
5 or more	31 (26.1)	22 (35.5)	4 (17.4)	57 (27.9)	(0.17)
Total	119 (58.3)	62 (30.4)	23 (11.3)	204 (100.0)	
Grade Point Average:					
Less than 60	13 (10.9%)	8 (12.9%)	2 (8.7%)	23 (11.3%)	5.84
60 to 69	82 (68.9)	33 (53.2)	17 (73.9)	132 (64.7)	
70 or over	24 (20.2)	21 (33.9)	4 (17.4)	49 (24.0)	(0.21)
Total	119 (58.3)	62 (30.4)	23 (11.3)	204 (100.0)	
Grade Level Taught:					
Elementary	29 (24.6%)	12 (23.5%)	9 (45.0%)	50 (26.5%)	8.69
Junior High	40 (33.9)	16 (31.4)	9 (45.0)	65 (34.4)	
High School	49 (41.5)	23 (45.1)	2 (10.0)	74 (39.2)	(0.07)
Total	118 (62.4)	51 (27.0)	20 (10.6)	189 (100.0)	

scores for the three categories of educational practitioners.

Findings. The analysis of variance revealed that there were differences among the means of the various employment categories on two of the ten scales. These were Thinking Introversion and Estheticism. As Table 47 indicates, for Thinking Introversion teachers had a mean score of 56, coordinators a mean score of 61, and principals a mean score of 53, all with a similar standard deviation range. The Newman-Keuls comparison of means revealed that the difference between the coordinator and principals' category was statistically significant at the 0.01 level. The results of the analysis of the Estheticism scale revealed that teachers had a mean score of 46, coordinators had a mean score of 52, while the principals' category scored 49. The standard deviations were similar, and the Newman-Keuls comparison indicated a statistically significant difference at the 0.05 level between the teachers and the coordinators, with the latter group exhibiting the higher level of Estheticism.

One further observation was noted from the findings of this initial analysis of variance among the various employment categories of educators as reported in Table 47. Although none of the results of the Education Profession Aspiration Scales (EPAS) were significant at the a priori level, all five scales consistently showed a similar directional bias. The rank order for all the aspiration scales increased through the employment categories; teachers had the lowest scores, coordinators had an increased score, and

TABLE 47

ESAI Scores for Categories of Educational Practitioners

Variable	1. Teachers (119)		2. Coordinators, etc. (61)		3. Principals, etc. (23)		f	p	Significance Between Groups
	Mean	SD	Mean	SD	Mean	SD			
Thinking Introversion	55.09	13.81	60.70	13.56	52.64	14.11	4.33	0.01	3-2
Social Introversion	50.68	15.88	49.43	15.87	52.86	17.38	0.38	0.68	-
Theoretical Orientation	55.29	14.76	58.92	13.87	57.50	14.80	1.30	0.27	-
Estheticism	46.33	14.64	52.20	16.13	48.64	13.08	3.11	0.04	1-2
EPAS 1 (realistic present)	38.08	12.53	40.16	11.15	42.41	13.39	1.44	0.24	-
EPAS 2 (optimistic present)	44.02	17.41	46.28	12.65	49.45	18.20	1.20	0.31	-
EPAS 3 (realistic future)	42.29	17.07	46.07	16.04	47.86	14.39	1.72	0.18	-
EPAS 4 (optimistic future)	48.92	18.25	52.61	16.29	53.77	15.62	1.32	0.27	-
EPAS 5 (self-appraisal)	41.59	16.51	43.11	13.79	46.95	15.94	1.13	0.33	-
EPAQ	57.54	17.64	54.25	17.07	53.86	19.19	0.91	0.40	-

members of the vice-principal/principal employment category attained the highest scores.

Discussion. The OPI Research Manual (1962) indicates that there is an intercorrelation of .63 between Thinking Introversion and Estheticism (supra, p. 65). It was not surprising therefore that the scales should both reveal statistically significant differences among the employment categories. The Estheticism scale, as reported in the OPI research literature, differentiates between males and females, with females scoring higher than males. In the present study there was only one female in the principals' group, this may in part have accounted for the low score of that employment category. The coordinator/consultant employment category includes a considerable proportion of females, and also includes the special-subject specialist from the male population. For fine-arts specialists this would have included the males with a higher than median Estheticism score. Both of these factors, the presence of females and the presence of high scoring males, may have contributed to the high score for the employment category.

Further analysis. The analyses for the second and third hypotheses suggested that there seemed to be a relationship between sex and employment position. Since in this entire study there was only one female out of a sample of twenty-three vice-principals and principals, it was decided to examine the personality scores of the Education

Student Attitude Inventory (ESAI) controlling for sex.

Sex. Part of the analysis for the first hypothesis considered the Albertan teaching force male persists with the female persists. It was considered appropriate at this point to restate the findings for the comparison of the total male sample with the total female sample, before presenting the findings of the analysis of the comparison of the various categories of male and then female educational practitioners.

Findings. Statistically significant differences between males and females were revealed on two of the Omnibus Personality Inventory scales (OPI) and on all five of the EPAS's as shown in Table 48. Males scored higher than females on Theoretical Orientation and on all five of the EPAS's, and lower than females on the Estheticism scale.

The second analysis compared the ESAI scores of the various categories of female educational practitioners, and the findings are reported on Table 49. There were two findings which revealed statistically significant differences between groups, though it should be noted that as there was only one female in the principals' group the category was eliminated from this analysis. Female coordinators and consultants scored higher than classroom teachers on Estheticism and on the second EPAS which asks for an optimistic short-range statement of a teaching position, and so is considered a measure of short-range employment

TABLE 48

ESAI Scores for Male and Female Persists in the Alberta Teaching Force

Variable	Male		Female			
	Mean	SD	Mean	SD	t*	p
Thinking Introversion	56.26	14.20	57.09	13.50	-0.15	0.88
Social Introversion	51.31	15.75	48.39	16.47	1.19	0.23
Theoretical Orientation	60.06	13.59	49.28	13.93	5.06	beyond 0.001
Estheticism	46.29	15.67	53.27	12.71	-3.21	0.002
EPAS 1 (realistic, present)	42.78	7.75	36.95	6.74	5.59	beyond 0.001
EPAS 2 (optimistic, present)	50.98	12.13	42.72	9.82	4.57	beyond 0.001
EPAS 3 (realistic, future)	51.25	9.43	40.73	7.79	7.30	beyond 0.001
EPAS 4 (optimistic, future)	57.42	10.86	46.34	9.52	6.72	beyond 0.001
EPAS 5 (self-appraisal)	47.59	10.97	41.83	9.74	3.44	beyond 0.001
EPAQ	56.21	17.67	56.22	18.43	-0.01	0.99

*The negative sign is used to indicate the direction of the differences. All t values are positive.

TABLE 49

ESAI Scores for Female Educational Practitioners

Variable	1. Teachers (42)		2. Coordinators (20)		f	p	Significance Between Groups
	Mean	SD	Mean	SD			
Thinking Introversion	55.10	12.30	61.15	15.75	2.73	0.10	-
Social Introversion	48.98	17.43	45.55	14.40	0.58	0.45	-
Theoretical Orientation	48.62	14.37	51.30	13.27	0.49	0.48	-
Estheticism	50.60	12.85	58.35	11.55	5.25	0.02	1-2
EPAS 1 (realistic, present)	34.38	11.46	36.25	7.42	0.44	0.51	-
EPAS 2 (optimistic, present)	37.52	14.48	42.75	9.32	2.17	0.15	-
EPAS 3 (realistic, future)	33.36	16.43	41.60	8.70	4.42	0.04	1-2
EPAS 4 (optimistic, future)	41.62	16.52	45.95	8.33	1.22	0.27	-
EPAS 5 (self-appraisal)	39.05	15.42	38.95	10.55	0.00	0.98	-
EPAQ	57.43	17.57	59.30	13.25	0.18	0.67	-

aspirations. The final analysis repeated the previous examination for the male sample, the findings of which are reported in Table 50; there were no statistically significant differences among any of the employment categories for any of the variables.

Though not statistically significant, one further parallel between the males and females was noted. All of the five EPAS's were all in rank order for the three employment categories for the males, and for the two employment categories for the females.

Discussion. The findings supported the OPI research which indicates that the Estheticism scale differentiates between the sexes with females scoring higher than males, and for Theoretical Orientation in which males generally score higher than females. The findings of the five EPAS's support the conventional wisdom on the amount and nature of the aspiration held by the sexes; either by professional or societal conditioning, females do not aspire to such high positions in the educational employment hierarchy as do males.

The increased Estheticism score of the female coordinators was perhaps explained by the fact that as special-subject specialists and consultants members of this category by definition (supra, p. 63) should have a higher level of Estheticism. The findings supported this belief. The females who were promoted to coordinators within five years of graduation were noted as having a higher short-range

TABLE 50

ESAI Scores for Male Educational Practitioners

Variable	1. Teachers (77)		2. Coordinators, etc. (41)		3. Principals, etc. (22)		f	p	Significance Between Groups
	Mean	SD	Mean	SD	Mean	SD			
Thinking Introversion	55.09	14.64	60.66	12.67	53.33	13.60	2.76	0.067	-
Social Introversion	51.61	15.00	50.32	16.71	53.00	17.42	0.21	0.81	-
Theoretical Orientation	58.94	13.74	63.29	12.95	58.43	13.34	1.60	0.20	-
Esthetic-ism	44.00	15.11	48.59	17.34	49.86	13.85	1.82	0.17	-
EPAS 1 (realistic present)	40.10	12.70	42.07	12.20	44.05	10.08	0.98	0.38	-
EPAS 2 (optimistic present)	47.56	17.94	48.00	13.77	52.67	14.78	0.83	0.44	-
EPAS 3 (realistic future)	47.17	15.44	48.17	18.31	50.10	9.89	0.30	0.74	-
EPAS 4 (optimistic future)	52.91	18.02	56.12	18.33	54.90	9.93	0.49	0.61	-
EPAS 5 (self-appraisal)	42.97	17.01	45.15	14.81	48.14	12.35	0.95	0.39	-
EPAQ	57.60	17.79	52.81	17.09	58.24	18.82	1.13	0.33	-

optimistic aspiration than their non-promoted peers. A possible explanation might be that through special skills, interests or added training these individuals expected to be noticed early, even though the statistically non-significant difference in the "realistic-short-range" measure indicated that they realized that they had to start out in a limited given range of employment positons. Even here, however, the subsequently promoted females had a higher aspiration level than their peers.

The observation of aspiration levels noted above, while not attaining statistical significance is still a remarkable finding. The measures of aspiration for the sample were taken before the individual had entered the profession, with the exception of the experienced returnees (supra, p. 75). Five years after the measures were taken the individuals had achieved a variety of employment positions in education, and some had been selected for a variety of appointments, by chance, by means of GASing (Griffiths, 1963), by being upward-mobiles (Presthus, 1962), by the use of presage criteria; (Mitzel, 1960), by means of administrative selection (Carlson, 1962), or by some other means. Nevertheless, individuals latterly employed as classroom teachers reported the lowest level of aspiration in the pre-employment measures. Coordinators currently employed now reported a higher level of aspiration five years earlier, while current administrators reported the highest aspiration level five years earlier. The consistency of this finding through five

scales uniformly suggests that there is some kind of motivation or aspiration within the personality of the individuals who are promoted to the various employment positions in education, and that this aspiration existed even before graduation.

The fourth hypothesis stated that there would be differences in personality among various categories of educational practitioners. Differences were found on two of the ten variables among the three employment categories considered. There were no statistically significant differences among the male employment categories, though non-significant differences were observed; there were two variables which revealed significant differences between the two female employment categories. There were also noted statistically significant differences between the males and the females when examined along personality variables. The hypothesis was accepted in part on the basis of these findings.

VII. SUMMARY OF FINDINGS

Research hypothesis 1. There will be differences between persists and non-persists in the Alberta teaching force when compared by personal, professional and personality variables.

Statistically significant differences were found between the persists and non-persists on a number of variables; these significant variables were found in each of the three categories of variables examined, and are summarized as

follows:

(a) There was a difference between the persistence rate in the Alberta teaching force of females and of males.

(b) There was a difference in persistence among individuals when grouped according to the size of their home town.

(c) There was a difference in persistence among individuals when grouped according to their family socio-economic status.

(d) There was a difference in persistence among the males in the sample when grouped according to the number of courses taken in their major subject area.

(e) There was a difference in persistence among the females in the sample when grouped according to the number of years of teaching experience they had had prior to entering University.

(f) The number of years spent between completing grade XII and entering University related significantly to the rate of female persistence in the Alberta teaching force.

(g) Persists scored higher on Theoretical Orientation and lower on Estheticism than did non-persists.

(h) Persists scored significantly higher in both of the Aspiration scales which measure the optimistic aspiration. There was no statistically significant difference between the persists and the non-persists on the realistic aspiration measures.

(j) Male non-persists scored higher on the personal

assessment measure than did the persists.

(k) Female non-persists scored higher on the realistic aspiration scales, both present and future, than did the persists.

(l) Male persists and non-persists scored higher than their female counterparts on Theoretical Orientation, and on all five EPAS's, and lower on Estheticism.

(m) There were no statistically significant differences among either of the samples on the Education Profession Attitude Questionnaire, or on Social Introversion or Thinking Introversion.

As all the variables examined did not reveal significant differences, the hypothesis could not be completely accepted. The statistically significant variables were found in each of the three categories examined, i.e., personal, professional and personality. The first hypothesis was thus supported in part, and so was accepted on that basis.

Research hypothesis 2. There will be differences among various categories of educational practitioners when classified according to a number of personal variables.

There was a statistically significant difference among the three categories of educational practitioners when they were divided by sex. There were significantly different relative percentages of each sex employed in each category of practitioner.

When the whole sample was controlled for sex there were no significant differences among the females for any

of the other five variables, and only one significantly different variable grouping for the males. Differences in employment categories appeared to be related to the ethnic origin of the male sample.

The findings reported were statistically significant; no other variables attained the 0.05 level of significance established a priori. The hypothesis was therefore only accepted in part.

> Research hypothesis 3. There will be differences among various categories of educational practitioners when classified according to a number of professional variables.

Eight of the variables were related to professional preparation, and four to professional experience. Statistically significant differences were discovered on three of the preparation-related variables, and three of the experiential variables. These were:

(a) the number of years of education beyond grade XII,

(b) the number of degrees held,

(c) the number of graduate education courses completed,

(d) the number of years of teaching experience,

(e) whether employed by a rural or an urban board, and

(f) the urban-rural relationship between hometown origin and current employment locale.

Although not all of the variables examined proved to reveal significant differences, the variables which did contribute were divided equally between the two sub-groupings of professional variables. Half of the variables examined

were thus of significant interest. The third hypothesis was therefore accepted in part.

Research hypothesis 4. There will be differences in personality among various categories of educational practitioners.

The measures used included four Omnibus Personality Inventory scales, five Educational Profession Aspiration Scales, and the Education Profession Attitude Questionnaire. Differences among the employment categories attained statistical significance on Thinking Introversion, on which the principals' category scored lowest, and Estheticism on which the classroom teachers scored lowest. The differences among the categories on Social Introversion and Theoretical Orientation proved to be statistically non-significant, as did all of the five aspiration scales, and the professional attitude scale.

The secondary analysis revealed that none of the ten measures attained the 0.05 level for the male sample and that only two of the ten female measures were of statistical importance; Estheticism and the Future-Realistic aspiration scale, on both of which the classroom teachers scored lower than the coordinators, were both statistically significant at the established level. The comparison of means between the sexes was, however, very marked. Males scored higher than females on Theoretical Orientation, and on all five of the aspiration scales the level of significance was beyond the 0.001 level. Females were found to score higher than males on Estheticism.

The fourth hypothesis could not be rejected, since differences were observed. However the primary analysis did not differentiate among the employment categories for eight of the ten measures. The hypothesis was therefore accepted in part.

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CHAPTER VI.

SUMMARY, CONCLUSIONS AND IMPLICATIONS

I. SUMMARY OF THE STUDY

The Nature of the Study

This study was designed to investigate the relationship between demographic and personality variables and employment in various positions of the spectrum of educational practice. Three classes of variables were considered as being likely to be related to employment position. These were personal and professional variables and a series of personality measures. Four classes of employment categories were considered; non-persists, classroom teachers, the individuals engaged in coordinating, teaching special subjects and acting as department heads, and the fourth category of vice-principals and principals. The relationships between the variables and the employment position were examined.

The Conceptual Framework

The theory on which this study was based was drawn from a number of major sources: the formulation of personality, the selectivity of perception, the effect on personality of the perceived behaviour of leaders, criteria for promotion, and the role behaviour emphasis in upward-mobile individuals, as well as conceptualizations regarding personality types in the profession.

Analysis of the Problem

The central problem of the study concerned the relationship between personality variables, demographic variables and employment in a number of positions in the educational continuum, and was designed to shed more light on the existing knowledge concerning administrative selection and promotion. In the light of the available theoretical insights and existing research evidence, the study's central problem was stated in the form of research hypotheses. These suggested that differences among individuals can be related to (a) remaining in or leaving the Alberta teaching force, and that differences among various categories of educational practitioners can be related to (b) a number of personal variables, (c) a number of professional variables, and (d) a number of personality measures. These four research hypotheses were tested empirically.

Instrumentation and Methodology

Instrumentation. The data used to test the relationships hypothesised were gathered from a number of sources. The personality measures and some of the demographic information were derived from the Education Student Attitude Inventory (ESAI) completed in 1965. Information regarding certification and name changes was obtained from the files of the Department of Education; updated demographic information concerning subsequent employment including position, length and type of experience, number and type of degrees, and grade levels taught was obtained from the active files of the

Alberta Teacher's Association and the Opening Report Form (supra, p. 62), while the inactive files of the same organization confirmed the non-persistence of the inactive members. The final demographic variables of further graduate work undertaken since graduation, ethnic background and religious persuasion were all obtained from the files of the Faculty of Education.

The Experimental Sample. Data for hypothesis testing were gathered on 460 individuals who were in their final year of professional preparation in the Faculty of Education in 1964/65. 256 of these were no longer employed in the Alberta teaching force when the final data for this study were collected, while those remaining were working all over the province and in a variety of employment positions ranging from classroom teacher to Central Office staff. There were 140 male persists in the Alberta teaching force and 64 female persists out of an original population of 233 males and 227 females.

Data Collection. The ESAI returns of 1965 defined the population; no attempt was made to trace any individuals who were in the graduating class but did not complete the Inventory nor of tracing the source of the handful of incomplete and therefore unusable returns. Apart from these the total graduating class returns were used. This study was designed to make use of unobtrusive measures; no responses were planned from any individual apart from the initial

completion of the ESAI six years ago.

Statistical Treatment. All data were stored on IBM cards, and the analyses were carried out by using the IBM 360 computer. Statistical techniques employed to test for significant differences were of two principal classes. Differences between the various personal or professional variables and employment position were tested by means of chi-square analysis with the Yates correction for small cell frequencies applied as necessary. The individuals in each of the employment positions were compared on the basis of their personality measures by means of an analysis of variance, to which was added the Newman-Keuls Test of Ordered Means to isolate any significances. In all tests an alpha level of 0.05 was set a priori as the minimum level for the acceptance of a research hypothesis.

II. FINDINGS AND CONCLUSIONS

Acceptance of the Research Hypotheses

Research methodology employing a design of the "pure research" tradition is based on the assumption that hypotheses can only be accepted or rejected. The research design of the present study, involving a multitude of tests for each of the four hypotheses, recognizes a third possibility, namely, the partial acceptance of individual hypotheses. Part acceptance would seem to be a reasonable solution to the dilemma facing the researcher who when testing a given

hypothesis discovers statistically significant differences but not for all of the variables. The analysis revealed that for all four hypotheses in the present study statistically significant differences among the sub-groups were identified for some of the variables whereas no differences were identified for others. Neither complete acceptance nor complete rejection of any of these hypotheses was defensible. Part acceptance was the compromise decision.

The analysis revealed that in every case some variables seemed to differentiate between the sexes or among various categories of educational practitioners whereas other variables did not. These findings are reported for each hypothesis in the text that follows this section; an overview of them is presented in outline form in Tables 51 through 54.

Summary of Research Findings

The first research problem was concerned with differences in demographic variables and personality between the persists and the non-persists in the Alberta teaching force. Significant differences between these categories were found on three of the demographic variables, but on none of the personality measures. The significant variables were:

(a) sex, in which females were found to have a much lower persistence rate to males,

(b) rural versus urban home backgrounds, in which rural

TABLE 51

First Research Hypothesis: Summary of Findings

Variable		Persists	Non-persists
Sex		Males	Females
Age	NS	*(Older females)	(Younger females)
Rural/Urban Home Background		Rural/City	Large towns
Family Socio-Economic Status		Lower	Higher
Years in Education Faculty	NS		
Elementary/ Secondary route	NS		
Major Concentration Area	NS		
No. of Major Area Courses	NS	(Males with fewer courses)	(Males with several courses)
Years of Teaching Experience	NS		
Years between Grade XII and University	NS		
Grade Point Average	NS		
Thinking Introversion	NS		
Social Introversion	NS		
Theoretical Orientation		Higher	Lower
Estheticism		Lower	Higher
EPAS 1	NS		(Higher females)
EPAS 2		Higher	Lower
EPAS 3	NS		(Higher females)
EPAS 4		Higher	Lower
EPAS 5	NS		
EPAQ	NS		

* The findings in parentheses were revealed only on the secondary analyses.

TABLE 52

Second Research Hypothesis: Summary of Findings

Variable		Teacher	Consultant, etc.	Principal, etc.
Sex		Females		Males
Age	NS			
Rural/Urban Home Background	NS			
Family Socio-Economic Status	NS			
Religious Affiliation	NS			
Ethnic Origin	NS *	(Males: Pole/ Ukrainians)		(Males: Brit/ Germans)

* The findings in parentheses were revealed only on the secondary analyses.

TABLE 53

Third Research Hypothesis: Summary of Findings

Variable	Teacher	Consultant, etc.	Principal, etc.
Years of Education beyond Grade XII	Fewest	More	Most
Yrs. in Education Faculty	NS		
Education Route	NS		
Subject Major	NS		
No. of Courses in Major area	NS		
No. of Degrees Held	Fewest	Most	More
No. of Graduate Educ. Courses	Fewest	Most	More
Grade Point Average	NS		
Yrs. of Teaching Experience	Fewest	More	Most
Grade level taught	NS		
Rural/Urban Employment	City	City	Rural
Rural/Urban home/ employment	R,U/U	R,U/U	R,U/R

TABLE 54

Fourth Research Hypothesis: Summary of Findings

Variable		Teacher	Consultant, etc.	Principal, etc.
Thinking Introversion			Highest	Lowest
Social Introversion	NS			
Theoretical Orientation	NS			
Estheticism		Lowest	Highest	
EPAS 1	NS			
EPAS 2	NS			
EPAS 3	NS *	(Females - low)	(Females - High)	
EPAS 4	NS			
EPAS 5	NS			
EPAQ	NS			

* The findings in parentheses were revealed only on the secondary analyses.

and large city residents were found to persist more than the residents of the larger towns or smaller cities in Alberta,

(c) family socio-economic status in which individuals who reported a status higher than or equal to that of teachers were found to have a lower persistence rate than the individuals who reported a lower family status.

Further analysis controlling for sex revealed some significant differences between the sexes which had been masked in the gross analysis. The analysis of the variables indicated that there were significant differences between male persists and non-persists when grouped by the number of subject-major courses taken. The individuals who had taken the fewest courses had the best persistence rate.

When the secondary analysis was extended to the female sample three variables indicated significant differences between the female persists and non-persists.

(a) Older females had a much better persistence rate than did females under 25 years at graduation.

(b) Females who had had teaching experience before obtaining their degree had a better persistence rate than those who were completely inexperienced on graduation.

(c) Females who proceeded directly from High School to University had a lower persistence rate than those who had had one year away from education after High School.

The analysis of the personality measures revealed that two of the four OPI measures, Thinking Introversion and Social Introversion, did not differentiate between the

persists and the non-persists, but that persists scored higher than non-persists on Theoretical Orientation, and lower than non-persists on Estheticism. The measures also included five employment aspiration scales. The second and fourth scales ask for the identification of employment aspirations optimistically in the present, and in the future, and on both of these measures the individuals who subsequently proved to be persists scored significantly higher than those who proved to be non-persists. None of the other measures revealed statistically significant differences.

The first hypothesis was not proved for all of the variables; when the significances revealed by the secondary analysis were taken into account seven of the eleven demographic variables contributed significant differences as did four of the ten personality variables. The hypotheses was therefore accepted in part.

The second research hypothesis compared the incumbents in various employment positions in the Alberta teaching force when grouped by six personal variables. Significant differences among the various employment categories were noted when the sample was divided by sex, particularly since in this sample only one out of twenty-three vice-principals and principals was female. Almost one out of every six males was employed in that category.

A secondary analysis controlling for sex revealed that none of the differences between the female categories of educational practitioners attained statistical

significance, and only one of the five remaining variables revealed significant differences among the male practitioners. The sons of Ukrainians or Poles tended to be employed as classroom teachers, while the sons of Canadian, Britons or Germans had a greater likelihood of being employed as coordinators/consultants or as vice-principals or principals.

The fact that two of the six personal variables revealed significant differences at the 0.05 level indicates that the hypothesis could not be rejected, but could be accepted only in part.

The third hypothesis grouped the sample into the same employment categories as the previous hypothesis, and examined the differences among them when they were grouped according to a number of professional variables. Twelve variables were examined; eight variables were a product of the nature of the professional preparation, and the remaining four were related to the nature of the professional experience. Six of the variables, drawn equally from the two groups of variables, revealed differences which were significant at the established level. These were:

(a) number of years of education beyond Grade XII,

(b) number of graduate education courses taken,

(c) number of degrees held, and

(d) the number of years of teaching experience, in all of which the individuals with minimal attainments were most often found to be employed as classroom teachers, while the individuals with maximum attainments on the four variables

tended to be employed as coordinators and consultants, or with increased teaching experience as vice-principals or principals. The remaining two variables which revealed significant differences among the employment categories were:

(e) whether employed in a rural, a large town or small city, or a large city system, in which it was found that consultants and coordinators were proportionately more numerous in the urban systems, but that the vice-principals and principals in this sample were more frequently located in the rural systems, and

(f) the urban-rural relationship between home and current employment locale. There were significant differences between the males and females who had a rural background but a present urban employment; both samples showed evidence of a rural to urban drift, with the female sample providing the better example. Individuals of either sex who either remained in or moved to a rural setting generally were employed in higher educational categories than were their peers in urban systems.

The remaining variables did not reveal differences at the established level of significance. They were:

(a) the number of years in the Faculty of Education,

(b) whether trained on the elementary or secondary route,

(c) the subject major,

(d) the number of courses taken in the subject major,

(e) academic ability as measured by the college grade point average, and

(f) whether teaching at the elementary, junior high, or

senior high school level.

Twelve variables, representing two phases of the educational process, the preparation and the practice of the teacher, were examined, and differences were revealed among the various categories of practitioners on six of the variables, drawn from both groups of variables. The hypothesis was accepted in part.

The fourth research hypothesis compared the mean scores for the various categories of practitioners, on the ten measures of personality for statistically significant differences. Four of the measures were drawn from the Omnibus Personality Inventory (OPI), five aspiration scales were the Education Student Aspiration Scale (EPAS), and the final scale was the Education Profession Attitude Questionnaire (EPAQ); the ten scales were collectively called the Education Student Attitude Inventory (ESAI) and was taken from the Ratsoy (1965) study.

Differences among the various categories of educational practitioners were found on only two of the OPI scales, on Thinking Introversion and on Estheticism. None of the other measures revealed significant differences. The secondary analysis revealed that none of the ten measures differentiated among the male sample, and that female classroom teachers scored lower than the other female employment categories on Estheticism and on the aspiration measures which considered the realistic appraisal of employment in the future. The analysis also indicated, however, that males

scored significantly higher at the 0.05 level on Theoretical Orientation and higher at the 0.001 level on all five of the Aspiration scales than did the females; females scored significantly higher than males on Estheticism. There were non-significant differences on Social Introversion, Thinking Introversion, and the Professional Attitude scale between the sexes. The fourth hypothesis could not be rejected since differences were found; since the majority of the significances were revealed only by secondary analysis, the hypothesis was accepted only in part.

Conclusions from the Research Findings

The conclusions presented here were arrived at on the basis of the evidence from the present study. The sample on which this study was undertaken was not representative of the Alberta teaching force, since it consisted almost entirely of degree-holders. However, the rising qualifications for entrance to the profession are such that university graduation is increasingly becoming the norm, and the population of the present study may well be a fore-runner of the typical Alberta teaching force a few years hence. Nevertheless caution must be exercised in drawing any parallels or implications from the findings. This study considered two categories of variables. The first category consisted of personal and professional variables which were examined to reveal any differences existing among educational practitioners attributable to biological factors or to levels of professional preparation. The second category of variables

considered 'personality' as indicated by a group of variables tapping presumed significant facets of that concept and attempted to discern differences among the various categories of educational practitioners. The presence of distinct differences between categories would have been regarded as an indication of homogeneity of personality or professional type within the employment category, and heterogeneity of types within the profession.

The findings of this study point to a major conclusion in each of the categories of variable considered. In the demographic variables various significant differences were revealed, and these have been documented in the summaries. The striking result which pervades all of the analyses, however, is the great difference between males and females. This single factor is related to or accounts for many of the differences noted. The implication from this is that any research into teacher personalities or types which does not control for this variable is perhaps dealing with spurious findings. Since educational administrators are almost entirely male, while the population of classroom teachers, especially elementary teachers, has a large female component, any study comparing the responses from the employment categories without this control would be virtually assured of achieving statistically significant findings. This may account for the differences in aspiration between teachers and administrators which have been reported elsewhere (Tronc, 1969). Studies which did control for sex (von Fange, 1961)

reported limited positive findings only.

The second major conclusion concerns the second type of variables considered, namely the personality variables. The variables, drawn from the work of Heist (1962) and Strong (1943), were considered to differentiate between various kinds of individuals on the basis of their personalities. Strong's work successfully identified a series of interests which were closely related to vocational interests and aptitudes, while Heist developed the OPI to differentiate among various categories of college students. The Inventory proved particularly useful in identifying the creative and the gifted students (Research Manual, 1962).

The work of Griffiths (1963), and Corman (1967) in education, based initially on a conceptualization of Presthus (1962) suggests that a variety of personality types exists in the education profession and that these differ markedly from each other. The outstanding feature of this study is the lack of differentiation achieved using these conceptualizations as a theoretical base. Three possible explanations may account for this occurrence.

1. The concept of personality-types in education as suggested by Griffiths, Corman, and Bidwell may not be a valid conceptualization. The writers produced their personality categories as a product of research and presumably of hard data, which suggests that the reason for the failure of this study to distinguish between a variety of types lies not with the conceptualizations of the theorists, but with the design

of this study.

2. The measures chosen may not tap personality sufficiently, or alternately, there are other measures of personality which are of more importance in the selection of administrators or teachers whether they be upward mobiles or not. The OPI scales have been shown to distinguish among personality types, however, and considerable research has been based on their ability to differentiate among various types of individual. Furthermore, scales were chosen from the total OPI on a number of criteria (supra, p. 64) not least of which was the apparent appropriateness of the chosen factor to the task of the educational practitioner.

3. The personality of the educational practitioner may in a large part be formed as a result of interaction with the task itself, and be a product of the teaching environment. The fact that the measures used in this study were taken before this interaction had occurred may account for the lack of homogeneity of personality types within the subsequent employment categories. If the collective personality of various categories is a product of the environment, any examination of that personality would have to be taken after it had formed, i.e., after the individual had established himself in the profession.

4. A further possibility lies within the nature of the sample. All of the research studies on teacher personality previously quoted in the present study and on which the conceptualization was based were conducted in the United

States. All studies in this research area conducted in Alberta have had qualified findings (von Fange, 1961; Fast, 1964) even when using tried instruments. Studies which do reveal statistically significant differences between teachers and administrators are either not based on personality measures as such or else are potentially spurious as already discussed. It may well be that promotional patterns are not the same in Alberta as in New York City or that the nature of the non-educational opportunities is such that alternate employment is not as readily available in rural Alberta, or in the urban centres as in the larger U.S. metropolitan centres, thus tending to retain more individuals within the profession. The nature and open acknowledgement of ethnic origins may also differ between the United States and Canada (the melting-pot versus the human mosaic concept) thus affecting the kind of aspiration of individuals in the two differing societal mixes. This seems to be as likely an explanation for the non-significant findings and the differing applicability of the conceptualizations between the two countries.

III. IMPLICATIONS

Implications for the Practice of Educational Administration

A number of implications for administrative practice arise out of the findings presented:

1. There is an implication already noted that individuals who have additional degrees or have taken any

graduate education courses are appointed to consultant/coordinator type positions with minimum experience, and that after gaining experience they are promoted to the vice-principal/principal level. The desirability of this as an established practice could be debated. The prospect of making an inexperienced teacher a consultant simply on the grounds of added academic qualifications is suspect; effective consulting and coordinating is probably best effected by individuals with a mastery of subject-matter tempered with enough quality experience in the classroom that differing approaches and teaching conditions can be accommodated in the advice given to other teachers, some of whom at least will have considerable experience. Similarly, the lack of subsequent classroom experience will not serve the future principal well in administering his own school and staff.

The implication from the data and from the above discussion is that whether acknowledged or not the category of coordinator/consultant is often used as a convenient stepping-stone to higher administrative positions. In Alberta systems it may well be a way of GASing. If the case is made that consultancies are important links in the educational scheme, the positions should perhaps be staffed by individuals more committed to the task at hand than to gaining visibility or added promotion. Regarding the position more as a terminal or revolving staff position has important implications for staffing which appear to be markedly different from the present patterns.

2. On the basis of the findings from the study there is no justification for the use of any of the personality measures in the selection of administrators or consultants, since administrators are not seen to be of any given personality type as von Fange found, and as this study confirms. The heterogeneity of the population is apparently sufficiently broad to encompass a number of types in each classification of employment position.

3. If the personality of educational practitioners is indeed formed by interaction with the environment, then a careful placing of new entrants, perhaps under the personal guidance of a senior teacher, aided by in-service courses, may well ease the entry into the teaching environment, produce a more professional attitude, and help restrict the rate of disillusionment and resentment which culminates in non-persistence. Certainly this possibility of personality development should be explored further. The not uncommon practice of heaping heavy and/or undesirable teaching loads on the new teacher does not seem to be conducive of an enthusiastic attitude to the profession.

4. Female teachers are significantly different to male teachers on virtually all measures. Much has been made of the dearth of females in the higher levels of the employment hierarchy. Without doubt the inclusion of more females in these more senior positions would radically change the composition of the group, tapping a reserve of talent which is barely acknowledged at present. The 'normal' pattern of

administration in Britain and in Australia is that of a mother-substitute as the principal of the elementary schools; in both countries, too, there are many girls secondary schools administered with all female teachers and administrators with no apparent lack of efficiency compared with the all-male boys schools.

5. The findings of persistence and non-persistence are strong enough that serious doubt must be expressed at administrative attempts to reduce non-persistence by application of Herzbergian concept. Herzberg suggested that a number of factors contribute to satisfaction or dissatisfaction in individuals, but that conventional wisdom which sees these as a continuum from extreme to extreme--the more salary the greater the satisfaction; the less salary the greater the dissatisfaction, both increasing with quantity ad infinitum--this concept is incorrect. Herzberg suggests that:

> . . . five factors (achievement, recognition, work itself, responsibility and advancement) tended to affect job attitudes in only a positive direction. The absence of these factors did not necessarily result in job dissatisfaction. The eleven remaining factors, if not present, led to employee dissatisfaction. The absence of these factors tended not to lead to employee satisfaction . . . (Sergiovanni, 1967, p. 67).

The findings of non-persistence in this study, and in the Whitener (1965) research are such that no attention to hygenic factors (Herzberg, 1959) on the part of administration will likely change the rates of retention significantly. Chamchuck (1965) discusses the possibility of tapping the pool of talent which exists in the public at large in the form of non-persists, though this is not

necessarily any panacea. If concern for the cost of educating non-persists is genuine, the limiting of educational opportunities to the over 25 year old female would clearly reduce costs. Much is made of the desirability of having educated wives and mothers in the public at large, and their advantages would undoubtedly be lost if this suggestion were ever implemented. Nevertheless, the under 25 year old female is the single largest contributor to immediate non-persistence in the profession. However, the possibility must always exist that, as Chamchuck suggests, these immediately non-persisting females may re-enter the teaching force a number of years later and make significant contributions to the profession thereafter.

Implications for Further Research

In a study as sweeping as this many matters have to be passed over which may well repay more detailed examination. Some of the more obvious research projects are as follows.

1. The Griffiths, Corman, and Bidwell typologies were drawn from active teaching populations; perhaps the individual's responses will change over time to reflect the personality which emerges from interaction in an employment position. The re-administration of the ESAI with the same population after some years in the field would clearly establish whether this possible change is the case, and whether the conceptual typologies do emerge from data which are a product of the environment as well as the individual personality.

2. The Education Profession Aspiration Scales are part of the ESAI, but have been little used in research. The extent to which personal aspiration changes with the reality of the employment setting would be a worthy study; the indications are that aspiration declines with increasing age since the older practitioners were found to have lower aspiration scores than the younger practitioners; this is obviously too global a generalization. Under what conditions and for whom does the aspiration decline?

3. An analysis of the personality of young practising teachers grouped according to a variety of early teaching experiences and situations might reveal whether environment does help determine personality, and under what conditions non-persistence is increased.

4. There are indications that the career progression of administrators in Alberta is through the ranks of the consultant/coordinator/department-head category contrary to the progressions detailed by Griffiths. Research could reveal whether this is the case; the two classes of practitioners could also be compared along a number of measures which may affect administration such as Consideration, Initiating Structure, aspiration and scholarship.

5. The rapidity of appointment to the consultancy category which invariably involves a financial increment, suggests that there are cost-benefits accruing from the extra training. Research could compare the financial returns arising out of such appointments and relate them to the cost of the added

education apparently necessary for the individual to attain the various appointments.

6. The findings related to the rural versus urban setting suggest that there are organizational differences between systems in the two settings which are reflected in the relative number of administrators and consultants, and the length of teaching experience and training which is typical of rural versus urban consultants or principals. The nature of the organizational differences and the rate of persistence in these systems could be examined in an attempt to control some of the dysfunctions which may be discovered. The generally lower levels of professional preparation of rural teachers may well indicate the need for more consultants, not less as is presently apparently the case.

7. The typologies used in this and other studies have not been proved valid in the Alberta setting. Is there such a thing as a typology which describes the Alberta teaching force, and if so how does it differ from the American equivalents?

8. The final suggestion for research is proposed very speculatively. There are, as already noted, very considerable differences between males and females on virtually all the measures of personality. Yet the females in this population are not in any sense intellectually inferior as indicated by their mean GPA scores. If some of the factors which the various personality measures are designed to encompass were quantified so that an objective rating of, for instance, Estheticism could be established, would a

comparison of males and females of a like objective standard result in a score different to that obtained on the pencil test? Alternately stated, is there something about the expectations or aspirations of males and females which causes them to respond differently to identical questions or subjectively view themselves imprecisely, even when the objective reality of operational behaviour may be identical for specific individuals? That this may be the case would be of enormous significance for all manner of social science research and would be a most worthy addition to our knowledge of human behaviour.

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APPENDICES

APPENDIX A

EDUCATION STUDENT ATTITUDE INVENTORY

Attitude Inventory 1

The first part of the Attitude Inventory consists of four intermixed scales drawn from the Omnibus Personality Inventory. The list of numbers under the title of each scale in the Inventory identify the particular items (statements) included in the respective scales. The letter T or F following each item number indicates the correct scoring for the item.

Thinking Introversion (TI):

1 - F	15 - T	49 - F	77 - F	116 - T
2 - T	17 - T	54 - T	79 - T	117 - F
3 - T	18 - T	55 - F	82 - F	118 - T
4 - T	20 - T	57 - T	84 - T	122 - F
5 - F	21 - T	59 - T	86 - F	126 - T
6 - F	22 - F	65 - T	89 - F	129 - T
7 - T	23 - T	66 - F	90 - T	131 - T
8 - T	24 - F	67 - F	93 - T	133 - T
11 - F	25 - T	69 - F	95 - F	135 - F
12 - T	26 - F	71 - F	98 - T	136 - T
13 - T	27 - T	74 - T	104 - F	141 - T
14 - T	29 - F	76 - T	109 - T	144 - F

Theoretical Orientation (TO):

11 - F	51 - T	106 - T	143 - F	155 - F
15 - T	67 - F	107 - F	150 - F	156 - F
30 - T	80 - F	110 - T	151 - F	157 - F
31 - T	95 - F	114 - F	152 - T	158 - F
35 - T	98 - T	126 - T	153 - T	159 - T
40 - T	100 - T	142 - T	154 - F	160 - F
41 - T	105 - T			

Social Introversion (SI):

53 - T	70 - T	87 - T	102 - F	121 - T	137 - T
56 - F	72 - T	88 - T	103 - F	123 - T	138 - T
58 - T	73 - F	91 - T	108 - T	124 - F	139 - T
60 - F	75 - T	92 - F	111 - T	125 - T	140 - F
61 - F	78 - F	94 - T	112 - F	127 - T	145 - F
62 - T	80 - F	96 - F	113 - T	128 - T	146 - F
63 - T	81 - T	97 - F	115 - F	130 - T	147 - F
64 - F	83 - T	99 - T	119 - F	132 - T	148 - F
68 - T	85 - F	101 - T	120 - F	134 - T	149 - F

Estheticism (Es):

7 - T	27 - T	34 - T	42 - T	47 - T
9 - T	28 - T	36 - T	43 - T	48 - T
10 - T	30 - F	37 - T	44 - T	50 - T
16 - T	32 - T	38 - T	45 - T	52 - T
19 - T	33 - T	39 - T	46 - T	

Education Student Attitude Inventory

This inventory is part of a study designed to compare selected attitudes of several groups of Education students. Part A requests personal background information. Parts B and C are attitude questions. Part D requests information on your aspirations within the Education profession.

All information will be coded on IBM cards. Data will be processed for **groups** of students. Complete anonymity is assured. In order to secure a high percentage of returns, it will be necessary to later contact those not present when questionnaires were distributed. Your name is requested **only** for purposes of identifying these persons.

The questionnaire takes about 45 minutes to complete. Work rapidly. First impulses are important. Thank you for your co-operation.

PART A

1. Name ..... (surname) (given names)

2. Age - CHECK ONE:
   1. ..... under 18
   2. ..... 18 or 19
   3. ..... 20 or 21 — 2
   4. ..... 22 to 25
   5. ..... over 25

3. Sex and Marital Status - CHECK ONE:
   1. ..... Single male
   2. ..... Single female
   3. ..... Married male
   4. ..... Married female — 3
   5. ..... Separated, divorced or widowed male
   6. ..... Separated, divorced, or widowed female

4. Place of birth - CHECK ONE:
   1. ..... Alberta
   2. ..... Outside Alberta but in Canada — 4
   3. ..... Outside Canada

5. Completed Grade XII in - CHECK ONE:
   1. ..... Edmonton
   2. ..... Calgary
   3. ..... Another Alberta City
   4. ..... Alberta town
   5. ..... Alberta village — 5
   6. ..... Alberta rural school
   7. ..... City or Town outside Alberta
   8. ..... Village or rural school outside Alberta

6. How many years have you attended university? CHECK ONE:
   1. ..... Beginning my first
   2. ..... Beginning my second
   3. ..... Beginning my third — 6
   4. ..... Beginning my fourth
   5. ..... Beginning my fifth
   6. ..... More than five years

7. How many years have you spent in the Faculty of Education? - CHECK ONE:
   1. ..... Beginning my first
   2. ..... Beginning my second
   3. ..... Beginning my third — 7
   4. ..... Beginning my fourth
   5. ..... More than four years

8. What route are you in? - CHECK ONE:
   (If you are in your first year, check the route you will be in next year).
   1. ..... Elementary
   2. ..... Secondary — 8
   3. ..... Vocational

9. What is (or will be) your major field of concentration? CHECK ONE: (If you have more than one field, check the one you are most interested in.)
   1. ..... English
   2. ..... Foreign language
   3. ..... Social Studies
   4. ..... Mathematics
   5. ..... Biological sciences
   6. ..... Chemistry
   7. ..... Physics — 9,
   8. ..... Fine Arts — 10
   9. ..... Physical Education
   10. ..... Industrial Arts
   11. ..... Home Economics
   12. ..... Early childhood education
   13. ..... Libraries
   14. ..... Education of Exceptional children
   15. ..... Other (specify) .....

10. How many university courses have you completed in your major field of concentration? CHECK ONE:
    1. ..... None
    2. ..... One course — 11
    3. ..... 2-3 courses
    4. ..... 4-5 courses
    5. ..... 6 or more courses

11. What grade level are you most interested in teaching?
CHECK ONE:
1. ..... Kindergarten
2. ..... Primary (1-3)
3. ..... Intermediate (4-6)
4. ..... Junior High (7-9) 12
5. ..... Senior High (10-12)
6. ..... Junior College
7. ..... University
8. ..... Other (specify) .....
....

12. What degree do you presently hold? CHECK ONE:
1. ..... None
2. ..... B.A. (specify major): 13,
.....
3. ..... B.Sc. (specify major) 14,
.....
4. ..... Other (specify degree and major): 15
.....

13. How much teaching experience have you had?
CHECK ONE:
1. ..... None
2. ..... 1 year
3. ..... 2-4 years 16
4. ..... 5-7 years
5. ..... Over 7 years

14. Since high school, how many years have you spent away from school or university? (working, etc.)
CHECK ONE:
1. ..... None
2. ..... 1 year
3. ..... 2-4 years 17
4. ..... 5-7 years
5. ..... Over 7 years

15. While at university, do you live
CHECK ONE:
1. ..... With your parents? 18
2. ..... Away from your parents?

16. Your cumulative university average (or grade XII average if in your first year) is:
CHECK ONE:
1. ..... under 55
2. 55-59
3. 60-64
4. 65-69
5. ..... 70-74 19
6. 75-79
7. 80-84
8. ..... 85 and over

17. The size of your hometown is:
CHECK ONE:
1. ..... Less than 1,000
2. ..... 1,000 - 5,000
3. ..... 5,000 - 25,000 20
4. ..... 25,000 - 200,000
5. ..... Over 200,000

18. Compared with your parents' socio-economic status, do you consider that your own socio-economic status as a teacher will be:
CHECK ONE:
1. ..... Considerably lower
2. ..... Somewhat lower
3. ..... Same 21
4. ..... Somewhat higher
5. ..... Considerably higher

19. Compared with the families of other university students, do you consider the socio-economic level of your family to be:
CHECK ONE:
1. ..... Considerably lower
2. ..... Somewhat lower
3. ..... Same 22
4. ..... Somewhat higher
5. ..... Considerably higher

20. The people you will associate with when a teacher will have:
CHECK ONE:
1. ..... Considerably less education than your parents
2. ..... Somewhat less education than your parents
3. ..... About the same level of education as your parents 23
4. ..... Somewhat more education than your parents
5. ..... Considerably more education than your parents

21. The persons you presently associate with most (i.e., your friends) are mainly:
CHECK ONE:
1. ..... Education students in the same major as you are in
2. ..... Education students but in another major
3. ..... Other university students 24
4. ..... Other Edmontonians
5. ..... People from your home town (other than Edmonton)

22. How much university training do you REALISTICALLY plan on having before you take your first teaching position? (If you have already taught, check the number you had before taking your first position.)
CHECK ONE:
1. ..... 1 year
2. ..... 2 years
3. ..... 3 years 25
4. ..... 4 years
5. ..... 5 years
6. ..... More than 5 years

PART B

ATTITUDE INVENTORY I

INSTRUCTIONS: READ CAREFULLY

26, 27 .....
28, 29 .....
30, 31 .....
32, 33 .....

This is not an ability or achievement test, but a means of reporting your attitudes, opinions, and feelings regarding a variety of subjects. There are no correct or incorrect answers.

Read each of the numbered statements and decide whether it is **true as applied to you or false as applied to you.** Although your response to each statement is important, your scores will be based on your answers to **groups** of statements.

It is not uncommon for persons taking an inventory of this type to be concerned about having to give simple **true** or **false** answers to the statements. Nevertheless, when **true,** for example, seems to be an inadequate response, you are still asked to circle **true** if the statement is **usually** true for you or more true than false.

Thus, if a statement is TRUE, or MOSTLY TRUE for you, **circle** T. If a statement is FALSE, or NOT USUALLY TRUE for you, **circle** F.

Circle Either T or F

1. I prefer to engage in activities from which I can see definite results rather than those from which no tangible or objective results are apparent ..... T F
2. I analyze what I like or dislike about a movie or play which I have seen ..... T F
3. I enjoy reading essays on serious or philosophical subjects ..... T F
4. I like to discuss the values of life, such as what makes an act good or evil ..... T F /5
5. I give more attention to the action of the story than to the characterizations or to the form and style of the literature I read ..... T F
6. I am more realistic than idealistic, that is, more occupied with things as they are than with things as they should be ..... T F
7. I enjoy listening to poetry ..... T F
8. I question statements and ideas expressed by my teachers ..... T F
9. I like dramatics ..... T F /10
10. Colored lights sometimes arouse feelings of excitement in me ..... T F
11. I dislike assignments requiring original research work ..... T F
12. I disagree with statements and ideas expressed by my classmates ..... T F
13. I like to read serious, philosophical poetry ..... T F
14. I like to write my reactions to and criticisms of a given philosophy or point of view ..... T F /15
15. I enjoy solving problems of the type found in geometry, philosophy, or logic ..... T F
16. I like modern art ..... T F
17. When I go to strange cities I visit museums ..... T F
18. I enjoy spending leisure time in writing poetry, plays, stories, or essays ..... T F
19. I like to listen to primitive music ..... T F /20
20. I leave the radio tuned to a symphony concert rather than to a program of popular music ..... T F
21. I analyze the motives of others and compare their reactions with my own ..... T F
22. I like to do work which requires little study or thought after it is once learned ..... T F
23. I show individuality and originality in my school work ..... T F
24. My conversations with friends usually deal with such subjects as mutual acquaintances and social activities ..... T F /25
25. I study and analyze my own motives and reactions ..... T F

26. I dislike being assigned to write a short story, play, essay or song ..... T F

27. I enjoy looking at paintings, sculpture, and architecture ..... T F

28. I would like to be an actor on the stage or in the movies ..... T F

29. I prefer popular music to classical music ..... T F /30

30. If I were a university professor and had the necessary ability, I would prefer to teach chemistry and physics rather than poetry ..... T F

31. The artist and professor are probably more important to society than the businessman and the manufacturer ..... T F

32. I am more sensitive than most people ..... T F

33. As a youngster I acquired a strong interest in intellectual and aesthetic matters ..... T F

34. I tend to make friends with men who are rather sensitive and artistic ..... T F /35

35. I have frequently found myself, when alone, pondering such abstract problems as free will, evil, etc. ..... T F

36. I enjoy hearing a great singer in an opera .... T F

37. I have spent a lot of time listening to serious music ..... T F

38. I enjoy reading Shakespeare's plays ..... T F

39. Much of my life I've dreamed about having enough time to paint or sculpture ..... T F /40

40. I would like to enter a profession which requires much original thinking ..... T F

41. I like to discuss philosophical problems ..... T F

42. I would like to collect prints of paintings which I personally enjoy ..... T F

43. I am fascinated by the way sunlight changes the appearance of objects and scenes ..... T F

44. I think I feel more intensely than most people do ..... T F /45

45. Sometimes I find myself "studying" advertisements, in order to discover something interesting in them ..... T F

46. I like to read about artistic or literary achievements ..... T F

47. I have at one time or another in my life tried my hand at writing poetry ..... T F

48. I am interested in the historical changes and developments in American jazz ..... T F

49. I like short, factual questions in an examination better than questions which require the organization and interpretation of a large body of material ..... T F /50

50. Courses in literature and poetry have been as satisfying to me as most other subjects ..... T F

51. It is highly unlikely that astrology will ever be able to explain anything ..... T F

52. I think I take primarily an aesthetic view of experience ..... T F

53. When travelling I am more interested in seeing the scenic or historical spots than in making new acquaintances ..... T F

54. I enjoy thinking of new examples to illustrate general rules and principles ..... T F /55

55. I am uninterested in discussions of the ideal society or Utopia ..... T F

56. I like to serve as a member of a committee in carrying out some activity or project ..... T F

57. I discuss the causes and possible solutions of social, political, economic, or international problems ..... T F

58. I prefer to stay at home rather than attend social affairs ..... T F /59

59. I prefer a long, rather involved problem to several shorter ones ..... T F /2

60. I have one or more dates each week ..... T F

61. I am cordial to strangers ..... T F

62. I am bored by people of my own age level .... T F /5

63. I seldom chat with clerks when they are waiting on me ..... T F

64. I like to take the lead at social gatherings .... T F

65. I react to new ideas which I hear or read about by analyzing them to see if they fit in with my own point of view ..... T F

66. I prefer to carry out an activity or job rather than to do the planning for it ..... T F

67. I am more interested in the application of principles and theories than in the critical consideration of them ..... T F /10

68. I have no desire to be with others and to know their interests and experiences ..... T F

69. I dislike test questions in which the information being tested is in a form different from that in which it was learned ..... T F

70. I do not like to act as host or hostess at parties ..... T F

71. I am unable to explain the reasons for my opinions and reactions ... T F

72. I work better when I am not being observed by others ... T F /15

73. I usually enjoy parties ... T F

74. I read articles or books that deal with new theories and points of view within my field of interest ... T F

75. I often feel that the people I meet are not interested in me ... T F

76. I would enjoy studying the causes of an important national or international event and writing a paper on these causes ... T F

77. I have difficulty in imagining the reaction of a person of another period, race, or country, to a given situation or environment ... T F /20

78. I am active on the committees of school organizations ... T F

79. I like to solves puzzles ... T F

80. My free time is usually filled up by social demands ... T F

81. I have the feeling of being detached and alone when I am in a group of people ... T F

82. I enjoy the actual laboratory work more than the study of the textbook for a course ... T F /25

83. I hestitate to ask the assistance of others ... T F

84. I enjoy writing a critical discussion of a book or article ... T F

85. I enjoy being in a crowd just to be with people ... T F

86. I like work requiring considerable physical activity ... T F

87. I am embarrassed when I arrive too early or too late at a social affair ... T F /30

88. I do not like to appear on programs or to give oral reports in class ... T F

89. I am bored by discussions of what life will be like one hundred years from now ... T F

90. I would enjoy writing a paper explaining a theory and presenting the arguments for and against it ... T F

91. I am slow to accept new acquaintances as friends ... T F

92. I like to converse and get acquainted with my teachers outside of class ... T F /35

93. I like to work crossword puzzles ... T F

94. I get stage fright when I have to appear before a group ... T F

95. I prefer to have a principle or theory explained to me rather than attempting to understand it on my own ... T F

96. I never worry about being different from other people ... T F

97. I do not enjoy eating meals by myself ... T F /40

98. I like assignments which require me to draw my own conclusions from some data or body of facts ... T F

99. I do not enjoy starting in at a new school or moving to a new community ... T F

100. I much enjoy thinking about some problem which is a challenge to the experts ... T F

101. I hestitate to ask the co-operation of others in carrying out activities such as the arrangements for a party ... T F

102. I am interested in conversations about people whether or not I am acquainted with them ... T F /45

103. I do not avoid large gatherings of people ... T F

104. I prefer to work with others rather than alone ... T F

105. I expect that ultimately mathematics will prove more important for mankind than theology ... T F

106. At an exposition I like to go where I can see scientific apparatus rather than new manufactured products ... T F

107. I prefer the practical man any time to the man of ideas ... T F /50

108. I find it difficult to carry on a light conversation with strangers ... T F

109. I am tantalized by a question or problem until I can think through to an answer satisfactory to myself ... T F

110. I like to imagine what is inside objects ... T F

111. I am ill at ease with members of the opposite sex ... T F

112. I work better when people praise me ... T F /55

113. I am a better listener than a conversationalist T F

114. I want to know that something will really work before I am willing to take a chance on it ... T F

115. I take an active part in group or class discussions ... T F

116. I prefer movies which are biographical or historical to movies of the musical comedy type ... T F /59

117. The thinking which I do is largely limited to that which I must do in the course of my work ..... T F /2

118. I enjoy listening to debates and discussions on social, economic, or political problems .... T F

119. I generally attend the meetings of school or college organizations ..... T F

120. I occasionally express appreciation personally to a lecturer, soloist, or other performer at a school or community program ..... T F /5

121. I prefer to eat in a small rather than a large restaurant or cafeteria ..... T F

122. I am more interested in learning facts than in relating them to my ideas and previous experiences ..... T F

123. I do not introduce myself to strangers at a social gathering ..... T F

124. I become so enthusiastic that my enthusiasm spreads to those around me ..... T F

125. I avoid becoming engaged in conversation with my barber or beauty parlor operator .... T F /10

126. I would enjoy writing a paper on the possible long-term effects or outcomes of a significant research discovery ..... T F

127. When I work I prefer to be alone rather than to have others around me ..... T F

128. I do not express my opinions freely ..... T F

129. I think about the values and meanings of a college education ..... T F

130. I prefer to visit with one person rather than with a group of people ..... T F /15

131. I enjoy a thought-provoking lecture ..... T F

132. I shy away from serving as the chairman of a committee ..... T F

133. I am aroused by a speaker's description of unfortunate conditions in a locality or country ..... T F

134. I hesitate to borrow money or personal belongings from others ..... T F

135. I dislike having others deliberate and hesitate before acting ..... T F /20

136. I question the accuracy of statements made in my textbooks or reference books ..... T F

137. In a group of people, new acquaintances or strangers pay little attention to me ..... T F

138. I find it difficult to give up ideas and opinions which I hold ..... T F

139. I prefer social functions to which only a small group of intimate friends is invited ..... T F

140. I really enjoy dances ..... T F /25

141. After a class period I think about the ideas presented there ..... T F

142. The main object of scientific research should be the discovery of truth rather than its practical applications ..... T F

143. Science has its place, but there are many important things that can never possibly be understood by the human mind ..... T F

144. I prefer to work outdoors rather than indoors . T F

145. If I encounter a person whom I have met previously, I begin a conversation with him .. T F /30

146. I enjoy teas and receptions ..... T F

147. I talk with strangers when I travel ..... T F

148. I enjoy watching football, basketball, or baseball games ..... T F

149. I enjoy chatting and playing with children ... T F

150. I don't care much for scientific or mathematical articles ..... T F /35

151. I dislike mathematics ..... T F

152. I like to read about science ..... T F

153. I like to look for faulty reasoning in an argument ..... T F

154. It puzzles me why some people will so avidly read and discuss science fiction ..... T F

155. I would rather read about the lives and works of men such as Alexander, Julius Caesar, and Charlemagne than about Aristotle, Socrates, and Kant ..... T F /40

156. When science contradicts religion it is because of scientific hypotheses that have not and cannot be tested ..... T F

157. It is hard for me to work intently on a scholarly problem for more than an hour or two at a stretch ..... T F

158. When I sit down to study it is hard to keep my mind on the material ..... T F

159. Science should have as much to say about moral values as religion does ..... T F

160. The idea of doing research does not appeal to me ..... T F /45

PART C

ATTITUDE INVENTORY II

DIRECTIONS: A number of controversial statements are given below. Indicate the degree of your personal agreement or disagreement with each statement by circling the appropriate number at the right.

CIRCLE 1—if you **agree strongly (AS)** with the statement.

CIRCLE 2—if you **agree somewhat (A)** with the statement.

CIRCLE 3—if you are **undecided (U).**

CIRCLE 4—if you **disagree somewhat (D)** with the statement.

CIRCLE 5—if you **disagree strongly (DS)** with the statement.

	AS	A	U	D	DS	
1. Schools should be granted greater local autonomy in curriculum building	1	2	3	4	5	
2. Provincial teachers' associations should be able to discipline members for violating teacher ethics	1	2	3	4	5	/35
3. Curriculum guides issued by the Department of Education should specify methods to be used	1	2	3	4	5	
4. School boards should be elected specifically to manage and administer the schools of the area and should be fiscally independent of municipal authorities	1	2	3	4	5	
5. Increased federal aid for education should be provided	1	2	3	4	5	
6. The curriculum authority of the Department of Education should be limited to matters of course objectives and minimum content	1	2	3	4	5	
7. Provincial teachers' associations should be concerned with the competence of teachers	1	2	3	4	5	/40
8. Effective teaching can be done with more than twenty-five pupils per class	1	2	3	4	5	
9. The local teaching staff should be consulted at all stages of the planning and designing of school buildings	1	2	3	4	5	
10. Only those individuals who have teaching certificates should be appointed to the instructional staff of the Faculty of Education	1	2	3	4	5	
11. The Alberta Teachers' Association should do everything in its power to maintain the right to strike	1	2	3	4	5	
12. Teachers should accept as part of their responsibility the supervision of pupil deportment on school premises during noon intermission	1	2	3	4	5	/45
13. Selection of instructional methods should be a prerogative of teachers	1	2	3	4	5	
14. Teachers should be paid according to a provincial salary scale	1	2	3	4	5	
15. Provincial teachers' associations should have the right to recommend cancellation of a teacher's certificate	1	2	3	4	5	
16. Membership in the provincial teachers' association should be compulsory for all teachers	1	2	3	4	5	
17. Teachers should be paid on the basis of merit	1	2	3	4	5	/50
18. All teachers should be employed and paid by the provincial government	1	2	3	4	5	
19. Teachers should decide whether or not they participate in or sponsor any particular extracurricular activity	1	2	3	4	5	
20. Teachers should be compensated for time spent in curriculum writing	1	2	3	4	5	

Continue on to page 8

PART D

EDUCATION PROFESSION ASPIRATION SCALE

Of the **60** Educational positions listed below, select the NUMBER corresponding to the position that best answers each of the following questions and **write this number** in the blank provided. For convenience, the positions have been listed in eight categories.

(a)	Which is the BEST position you are REALLY SURE YOU CAN GET when your schooling is over?	(a)	54, 55
(b)	Which ONE would you choose if you were FREE TO CHOOSE ANY of them you wished when your schooling is over?	(b)	56, 57
(c)	Which is the BEST ONE you are REALLY SURE YOU CAN HAVE ten years from now?	(c)	58, 59
(d)	Which is the ONE you would choose to have ten years from now, if you were FREE TO HAVE ANY of them you wished?	(d)	60, 61
(e)	Which is the BEST ONE you are CERTAIN you would be successful in, if you were given the opportunity of having it when YOUR SCHOOLING IS OVER?	(e)	62, 63

A. PRESCHOOL (nursery and kindergarten positions)

1. Teacher
2. Supervision of nursery schools
3. Research worker in child growth and development
4. Director of a private nursery or kindergarten

B. ELEMENTARY SCHOOL POSITIONS

5. Teacher for separate or combined grades in a small town
6. Teacher for separate or combined grades in a city
7. Teacher of special subjects such as art, music, or physical education
8. Teacher of physically handicapped or mentally retarded
9. Co-operating teacher in a demonstration school
10. General or special supervisor
11. Assistant principal in a small town school
12. Assistant principal in a city
13. Principal, small town school
14. Principal, city school
15. Librarian
16. Child psychologist or counselor
17. Curriculum consultant

C. SECONDARY SCHOOL POSITIONS (Junior and Senior High)

18. Teacher of academic subject, small town school
19. Teacher of vocational subject, small town school
20. Teacher of academic subject, city school
21. Teacher of vocational subject, city school
22. Co-operating teacher in a demonstration school
23. Department head of a subject area
24. Assistant principal, small town school
25. Assistant principal, city school
26. Principal, small town school
27. Principal, city school
28. Supervisor of a subject area
29. Curriculum consultant
30. Athletic coach
31. Guidance director
32. Librarian

D. ADMINISTRATIVE AND SPECIAL SERVICES

33. Superintendent of a city system
34. Assistant superintendent of a city system
35. Business manager (supplies, purchasing, etc.)
36. Research director
37. Director of audio-visual materials, city school system
38. Director of public relations, city school system
39. School psychologist, city school system
40. Personnel director, city school system

E. JUNIOR COLLEGE POSITIONS

41. Teacher of subject field
42. Personnel director
43. President or dean
44. Registrar
45. Business manager

F. UNIVERSITY POSITIONS

46. Lecturer in any subject field offered in the Faculty of Education
47. Professor in a subject field in the Faculty of Education
48. Head of a department in the Faculty of Education
49. Assistant dean of Education
50. Dean of Education
51. President of a university

G. PROFESSIONAL ORGANIZATIONS (such as the Alberta Teachers' Association or the Canadian Teachers' Federation)

52. Staff office or field worker
53. Executive secretary
54. Research worker

H. PROVINCIAL DEPARTMENT OF EDUCATION

55. Superintendent of a school division or county
56. Inspector of high schools
57. Director of a Division within the Department (e.g., Director of Vocational Education)
58. Director of a Branch within a Departmental Division (e.g., Director of Guidance, Director of Curriculum)
59. Chief superintendent of schools
60. Deputy Minister of Education

Your co-operation in completing this inventory is much appreciated.

Completeness in answering all items is important. Would you please check to see that a response has been made to all items.

You are reminded that all answers given here are held in strict confidence and that after coding, all replies become completely anonymous and are used thereafter only for statistical analysis.

THANK YOU.

APPENDIX B

Order of Variables in the Correlation Matrices

Variable Number	Nature of Variable	Response Categories (*as reported on ESAI unless noted hereunder)
1	Age	1 = 1943-1946, steps of 3 years to 9 = 1921 or earlier
2	Sex	*3
3	Employment position	1 = classroom teacher; 2 = coordinator etc.; 3 = principal etc.
4	Yrs. of educ. beyond Gr. XII	*6
5	Yrs. in Faculty of Educ.	*7
6	No. of courses in maj. sub. area	*10
7	No. of Degrees	1 = Bachelor; 2 = Two Bachelor; 3 = Masters.
8	Yrs. of teaching experience	Actual
9	No. of grad. courses	Actual
10	Academic GPA	*16
11	Size of hometown	*17
12	Parental Socio-economic status	*18

Appendix B (continued)

Variable Number	Nature of Variable	Response Categories (*as reported or ESAI unless noted hereunder)
13	Thinking Introversion	ESAI Part B (Appendix A)
14	Social Introversion	
15	Theoretical Orientation	
16	Estheticism	
17	Aspiration; realistic, present.	ESAI Part D (Appendix A)
18	Aspiration; optimistic, present.	
19	Aspiration; realistic, future.	
20	Aspiration; optimistic, future.	
21	Aspiration; personal assessment.	
22	Professional attitude.	ESAI Part C (Appendix A)

Correlation Matrix for the Results of the Analyses of Variables

*	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22
1.	...	[a].000	.95	.04	.49	.07	.05	.02	.000	.20	.15	.80	.80	.02	.38	.29	.000	.02	.001	.05	.08	.14
2.	[a].28	...	.02	.02	.93	.08	.11	.05	.46	.21	.16	.69	.88	.22	.000	.003	.000	.000	.000	.000	.02	.87
3.	-.01	-.16	...	.46	.50	.27	.46	.45	.42	.01	.71	.36	.75	.97	.32	.04	.10	.02	.03	.04	.05	.39
4.	-.14	-.16	.05	...	.02	.000	.000	.000	.07	.28	.000	.03	.02	.92	.01	.67	.000	.04	.001	.02	.06	.88
5.	-.05	.01	-.05	-.16	...	.06	.10	.000	.003	.20	.30	.08	.50	.10	.08	.18	.79	.80	.77	.11	.01	.000
6.	-.13	-.12	-.10	.25	-.13	...	.03	.07	.000	.51	.004	.004	.09	.28	.004	.25	.10	.49	.03	.06	.21	.84
7.	-.14	-.11	-.05	.30	-.12	.15	...	.000	.000	.25	.001	.04	.02	.03	.12	.73	.002	.26	.02	.57	.69	.95
8.	-.17	-.14	.05	.51	-.31	.12	.23	...	.000	.000	.004	.18	.07	.99	.004	.25	.18	.64	.64	.63	.69	.01
9.	.49	.05	.06	-.13	.20	-.24	-.27	-.28	...	.35	.14	.01	.01	.05	.01	.28	.13	.89	.17	.85	.55	.001
10.	-.09	-.09	.17	.07	.09	.05	.08	.37	-.07	...	.22	.22	.89	.05	.28	.54	.21	.94	.92	.15	.98	.62
11.	-.10	.10	.03	.32	-.07	.20	.23	.20	-.10	.09	...	.21	.000	.82	.06	.25	.08	.74	.16	.75	.58	.39
12.	.02	-.03	-.06	.15	-.12	.20	.14	.09	-.18	.09	.09	...	.37	.66	.47	.83	.94	.002	.72	.08	.28	.66
13.	.02	-.01	.02	.16	-.05	.12	.16	.13	-.18	-.01	.25	.06	...	.000	.000	.000	.41	.14	.04	.64	.08	.83
14.	.16	-.09	.00	.01	-.11	-.17	-.15	-.00	.14	-.14	-.02	.03	-.24	...	.14	.04	.31	.91	.35	.99	.09	.05
15.	-.06	-.34	.07	.18	-.12	.20	.11	.20	-.17	.07	.13	.05	.63	-.10	...	.50	.22	.24	.01	.77	.12	.96
16.	.07	.20	.14	-.03	.09	-.08	.02	-.08	.08	-.04	.08	-.01	.46	-.14	.05	...	.23	.75	.20	.65	.74	.33
17.	-.25	-.25	.12	.26	-.02	.11	.21	.09	-.11	.09	.12	.01	.06	-.07	.09	-.08	...	.000	.000	.000	.000	.83
18.	-.16	-.26	.13	.14	.02	.05	.08	.03	-.01	.01	-.02	-.21	.10	.01	.08	-.02	.65	...	.000	.000	.000	.58
19.	-.22	-.34	.15	.22	.02	.15	.16	.03	-.01	-.01	.10	-.02	.14	-.07	.19	-.09	.57	.52	...	.000	.000	.51
20.	-.14	-.27	.14	.17	.11	.13	.04	-.03	-.01	-.10	.02	-.12	.03	-.00	.02	-.03	.55	.69	.69	...	.000	.90
21.	-.12	-.16	.13	.13	.18	.09	.03	-.03	-.04	-.00	.04	-.08	.12	-.12	.11	-.02	.59	.62	.62	.73	...	.20
22.	.10	.01	-.06	.01	.27	.01	-.00	-.17	.22	-.03	-.06	-.03	-.14	-.13	-.00	-.07	-.01	-.04	.05	.01	.09	...

[a]Correlations are shown below the diagonal; probabilities are shown above the diagonal.

*Nature of the variables is shown on the preceding table.

Correlation Matrix for the Results of the Female Analyses of Variables

*	1	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22
1.	...	[a].51	.40	.57	.10	.10	.000	.72	.13	.82	.86	.76	.03	.66	.22	.01	.29	.28	.43	.61	.62
3.	[a].28	...	.68	.82	.20	.04	.25	.09	.70	.002	.23	.48	.56	.60	.04	.48	.94	.40	.92	.29	.24
4.	-.11	.05	...	.41	.18	.000	.76	.03	.01	.32	.80	.08	.79	.06	.79	.09	.21	.01	.09	.38	.12
5.	-.07	.03	-.11	...	.93	.004	.31	.09	.75	.62	.39	.79	.02	.22	.05	.58	.94	.40	.62	.44	.19
6.	-.21	-.16	.17	-.01	...	.38	.02	.86	.31	.05	.36	.27	.74	.02	.65	.05	.47	.16	.31	.14	.75
7.	-.21	.26	.49	-.36	.11	...	.01	.53	.02	.83	.98	.15	.91	.12	.62	.21	.31	.16	.83	.97	.45
8.	.52	-.15	.04	.13	-.29	-.32	...	.89	.70	.93	.31	.54	.01	.25	.42	.01	.02	.06	.07	.10	.02
9.	-.05	.22	-.28	.21	-.02	-.08	-.02	...	.95	.74	.56	.09	.17	.31	.24	.11	.18	.31	.10	.22	.40
10.	-.19	.05	.31	-.04	.13	.29	-.05	-.01	...	.83	.01	.43	.36	.35	.75	.10	.74	.21	.47	.28	.97
11.	-.02	-.37	.13	-.06	.25	-.03	-.01	.04	-.03	...	.91	.77	.38	.67	.83	.45	.14	.55	.06	.10	.53
12.	.02	.15	-.03	-.11	-.12	.00	.13	.08	.32	-.02	...	.84	.49	.13	.92	.42	.30	.20	.49	.63	.06
13.	.04	.09	.22	.03	.14	.18	-.08	-.21	.10	-.04	.03	...	.13	.000	.000	.56	.65	.68	.89	.19	.12
14.	.28	-.08	.03	-.30	-.04	-.01	.32	-.17	.12	-.11	.09	-.19	...	.53	.30	.31	.58	.30	.61	.17	.27
15.	.06	.07	.23	-.16	.29	.20	-.15	-.13	.12	-.05	.19	.71	-.08	...	.12	.47	.42	.98	.57	.76	.32
16.	-.16	.27	.03	.24	.06	.06	-.10	-.15	.04	-.13	-.01	.47	-.13	.20	...	.41	.62	.50	.65	.77	.46
17.	-.31	-.09	.21	-.07	.25	.16	-.32	-.20	.21	.10	-.10	.08	-.13	-.09	.11	...	.000	.000	.000	.000	.80
18.	-.14	.01	.16	-.01	.09	.13	-.29	-.17	-.04	-.19	-.13	.06	-.07	-.10	.06	.70	...	.000	.000	.000	.44
19.	-.14	.11	.32	-.11	.18	.18	-.24	-.13	.16	-.08	-.16	.05	-.13	-.004	-.19	.60	.68	...	.000	.000	.82
20.	-.10	-.01	.22	.06	.13	.03	-.23	-.21	.09	-.24	-.09	.02	-.07	-.07	-.06	.64	.87	.70	...	.000	.67
21.	-.07	-.13	.11	.09	.19	.00	-.21	-.16	.14	-.21	-.06	.17	-.18	.04	-.04	.65	.78	.65	.83	...	.13
22.	.06	-.15	.20	.17	-.04	-.10	.28	-.11	-.00	-.08	.24	.20	-.14	.13	-.10	.03	.10	.03	.05	.20	...

[a]Correlations are shown below the diagonal; probabilities are shown above the diagonal.

*Nature of the Variables is shown in the preceding table.

Correlation matrix for the Results of the Male Analyses of Variables

*	1	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22
1.	...	[a].19	.24	.80	.96	.19	.000	.30	.23	.31	.82	.95	.10	.83	.13	.09	.35	.06	.53	.19	.08
3.	[a].11	...	.85	.36	.40	.89	.10	.08	.57	.83	.77	.94	.92	.98	.05	.12	.19	.18	.12	.03	.68
4.	-.10	.02	...	.02	.001	.000	.01	.01	.000	.05	.90	.13	.72	.32	.89	.003	.31	.19	.26	.21	.28
5.	-.02	-.08	-.19	...	.01	.000	.003	.56	.26	.09	.21	.28	.78	.17	.68	.95	.75	.37	.11	.01	.000
6.	-.00	-.07	.27	-.21	...	.16	.01	.47	.001	.05	.50	.19	.19	.21	.21	.82	.90	.28	.27	.86	.61
7.	-.13	-.01	.53	-.31	.12	...	.001	.000	.01	.14	.97	.17	.05	.06	.34	.64	.72	.40	.25	.45	.02
8.	.48	.14	-.22	.25	-.20	-.28	...	.34	.07	.001	.57	.003	.88	.03	.10	.96	.11	.44	.22	.56	.03
9.	-.09	.15	.21	.05	.06	.46	-.10	...	.11	.24	.72	.50	.66	.18	.92	.07	.77	.94	.21	.74	.94
10.	-.10	.05	.37	-.09	.26	.20	-.15	.13	...	.09	.65	.000	.10	.01	.37	.11	.79	.91	.66	.78	.28
11.	.08	.02	.17	-.14	.16	.12	-.27	.10	.14	...	.81	.23	.42	.31	.94	.57	.004	.11	.23	.72	.97
12.	-.02	-.02	.01	-.11	.06	.00	-.05	-.03	-.04	.02	...	.55	.26	.91	.13	.88	.87	.79	.38	.53	.30
13.	-.01	.01	.12	-.09	.11	.11	-.05	.06	.33	.10	.05	...	.001	.000	.000	.50	.14	.36	.64	.19	.18
14.	.14	.01	-.03	-.02	-.11	-.01	-.25	-.14	-.07	.09	.10	-.26	...	.04	.12	.33	.95	.02	.91	.17	.12
15.	.02	.01	.08	-.11	.12	.16	-.18	.11	.21	.08	.01	.64	-.17	...	.22	.63	.72	.30	.35	.41	.47
16.	.13	.17	-.01	.03	-.10	-.08	.14	.01	.07	-.01	.13	.47	-.03	.10	...	.37	.77	.14	.56	.75	.44
17.	-.14	.13	.24	-.00	.02	.04	.00	.15	.13	-.05	-.01	.06	-.08	.04	-.07	...	.000	.98	.000	.000	.69
18.	-.08	.11	.09	.03	-.01	-.03	.13	.02	.02	-.23	-.01	.12	.01	.03	.02	.60	...	.000	.000	.000	.29
19.	-.16	.11	.11	.07	.09	-.06	-.01	-.01	.13	-.02	.08	.19	-.09	.12	.00	.50	.41	...	.000	.000	.46
20.	-.05	.13	.09	.13	.09	-.10	.10	-.10	.04	-.10	.07	.04	-.01	-.08	.05	.48	.61	.63	...	.000	.96
21.	-.11	.18	.11	.21	.01	-.06	.05	.02	.02	-.03	-.05	.11	-.11	.07	.03	.55	.56	.59	.69	...	.56
22.	-.15	-.04	-.09	.32	.04	-.20	.18	.94	.28	.97	.30	.18	.12	-.06	-.06	-.03	-.09	.06	-.01	.05	...

[a]Correlations are shown below the diagonal; probabilities are shown above the diagonal.

*Nature of the variables is shown in preceding table.