

THE IMPORTANCE ASSIGNED TO COUNSELLING FUNCTIONS  
BY STUDENTS IN A PUBLIC ADULT NIGHT SCHOOL

by

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B.A., McMaster University, 1958

A THESIS SUBMITTED IN PARTIAL FULFILMENT OF  
THE REQUIREMENTS FOR THE DEGREE OF

MASTER OF ARTS

in the Faculty of Education

(Adult Education)

We accept this thesis as conforming to the  
required standard

THE UNIVERSITY OF BRITISH COLUMBIA

APRIL, 1970

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## ABSTRACT

The purpose of this study was to determine whether adult students enrolled in credit courses in a public adult night school assigned the same degree of importance to various functions of an adult education counsellor. A Q-sort of fifty items representing four categories of functions--educational counselling, occupational counselling, personal counselling, and the counsellor-adult relationship--was administered to a volunteer panel of one hundred adult students in the Surrey School District of British Columbia. The hypothesis postulated no significant difference in the importance which adult students enrolled in credit courses in a public adult night school assign to various functions of an adult education counsellor. It was tested with regard to the total population and to a number of sub-groups established by sex, age, previous counselling, education, and occupation. In all instances the hypothesis was rejected at the .05 level, thus indicating that more importance was assigned to certain functions than to others.

By multiple comparisons designed to examine the relative importance assigned to the different functions, it was found that in the total population and almost all sub-groups educational counselling was considered significantly more important at the .05 level than either personal counselling or the counsellor-adult relationship, and that the combination of educational and occupational counselling was considered significantly more important than the combination of personal counselling and the counsellor-adult relationship. In addition, the unemployed female group viewed occupational counselling as significantly more important than either personal counselling or the counsellor-adult relationship.

Comparisons were made between pairs of sub-groups by sex, age, previous counselling, education, and occupation to investigate possible differences in the importance which they assigned to the counselling functions. The following results were significant at the .05 level: the female group regarded occupational counselling as more important than did the male group; the employed female group viewed occupational counselling as more important than did the unemployed female group; the unemployed female group considered the counsellor-adult relationship as more important than did the employed female group.

In the total population studied, the nine items considered most important reflected the adult student's desire for practical assistance in selecting courses, in establishing goals, and in better preparing himself for learning. The nine items considered least important indicated that the adult rejected the need for assistance in matters which he felt capable of handling on his own, and that he had little desire for counselling of a personal nature.

In addition to pointing out the specific counselling needs felt by the adults involved, this study demonstrated the particular concerns of women and the necessity for more research in this area. The usefulness of the Q-sort technique in such a study was shown.

## DEDICATION

To my wife Margaret and our children Brent, Christie and Mark.

## ACKNOWLEDGEMENTS

The writer wishes to express his sincere appreciation to Dr. John A. Niemi and Dr. Coolie Verner for the contribution of their insight and experience during the course of this study.

Grateful acknowledgement is also made of the co-operation and encouragement of Mr. W.L. Day, Director of Adult Education for the Surrey School District, and Mr. E. Palleson, Academic Counsellor and Evening Principal of Queen Elizabeth Senior Secondary School.

Lastly, the writer wishes to thank Mr. Ben Ganz and Dr. Walter Leirman for their assistance with the analysis of the data and Mrs. Sandra Queale for her expert typing of the thesis.

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## CHAPTER I

### INTRODUCTION

It has been noted that "the current generation of mature adults now represents the first generation faced with managing a culture different in kind than the one originally transmitted to them" (40:iv). With the change from the traditional assumption that "an individual can acquire in his youth the bulk of the knowledge and skill required for him to live adequately the rest of his life" (40:iv) has come the importance of the adult's receiving all possible assistance in his continuing education. One person capable of offering such assistance is the adult counsellor.

Unfortunately, although guidance and counselling in public school adult education is by no means unknown, nevertheless, with the considerable attention directed to elementary and secondary education in recent years, there has been insufficient recognition of the phenomenal growth of adult education and of the consequent need for adequate counselling. Westervelt (99:140-1) has stated:

Because the idea that formal schooling ends with youth has deep roots in America, adults need encouragement to continue their education. Because adult education is widely diversified in form and content, adults need help in choosing and using it to best advantage. The mere provision of a wealth of opportunities meets neither of these needs.

Thoughtful educators have long recognized that, whatever the place of counselling in the education of the young, it is central to the education of adults. The philosophy has, however, only recently begun to be translated into action in the field.

Wrenn (103:11, 162) has observed that automation will cause many adults to seek new occupations for which they have not been trained, and will cause changes for which they are not psychologically prepared. He has proposed

that counselors be prepared whose specific function will be to assist adults in educational and vocational planning and personal adjustment as they resume formal education at different periods in their lifetime.

Brunner (12:137) concluded that guidance of participants in adult education programs multiplied the positive effects and reduced the proportion of drop-outs. In Living and Learning (51:189), the report of the provincial committee on aims and objectives in the schools of Ontario, the importance of counselling in public school adult education was clearly stated in the recommendation:

Wherever adult education exists under the jurisdiction of school boards, extend counselling services to adults.

Despite such acceptance of the importance of counselling, considerations, largely financial, have restricted the amount of counselling actually performed in public adult night schools. Consequently, counsellors have had little opportunity to indulge in the luxury of research; yet it is just this which Kreitlow (47:244) considered necessary when he asked:

What are the role and function of guidance and counseling services for adults? What are the means and methods by which educational guidance and counseling can be provided to aid in the resolution of the continuing educational challenges of adulthood?

Just as adults have certain expectations of adult education, so it may be presumed that they also have certain expectations of the counsellor and his functions. Adults in continuing education normally extend over an age range of at least five decades. Numerous psychologists and sociologists have postulated

differing developmental processes and crises of adulthood (30, 36, 37, 54, 55, 57, 59, 87). This would suggest similar differences in the demands various groups of adults would make both of adult education and of the counsellor. Considering the scarcity of counselling available, it would seem desirable for the counsellor to be aware of the expressed needs of different groups of adults in order that his help might be more meaningfully directed.

### PURPOSE

It was the purpose of this study to determine whether adult students enrolled in credit courses in a public adult night school assigned the same degree of importance to various functions of an adult education counsellor.

### HYPOTHESIS

The central hypothesis of this study is

There is no statistically significant difference in the importance which adult students enrolled in credit courses in a public adult night school assign to various functions of an adult education counsellor.

The following sub-hypotheses are proposed to examine possible significant differences between various pairs of sub-groups:

1. There is no statistically significant difference by reason of sex in the importance which adult students assign to various functions of an adult education counsellor.
2. There is no statistically significant difference by reason of age in the importance which adult students assign to various functions of an adult education counsellor.
3. There is no statistically significant difference by reason of previous counselling in the importance which adult students assign to various functions of an adult education counsellor.

4. There is no statistically significant difference by reason of education in the importance which adult students assign to various functions of an adult education counsellor.
5. There is no statistically significant difference by reason of occupation in the importance which adult students assign to various functions of an adult education counsellor.

## PROCEDURE

### Population Studied

The Surrey School District is a rectangular-shaped area approximately fifteen by ten miles and lying to the southeast of the city of Vancouver between the Fraser River on the north and the United States border on the south; the Municipality of Delta on the west and the Municipality of Langley on the east (Appendix A). As the district serves mainly as a dormitory community for people who work in Vancouver, Burnaby, and New Westminster, the highest density of population is in the northwest section. For this reason the majority of adult education credit courses are held in this area at Queen Elizabeth Senior Secondary School (26).

Two important reasons behind the choice of the Surrey School District for the present study were the size and centralized nature of its credit adult education program, and the known interest and co-operation of its school board and its director of adult education.

At the time of the study there were approximately 320 adults enrolled in credit courses at Queen Elizabeth Senior Secondary. In consideration of the voluntary nature of the adult student, it was decided to use a panel method for the study. Accordingly, participants were obtained through volunteers. In the early part of November the writer was permitted to address each class of adults suitable for the study. The purpose of the study was briefly explained, questions were invited, and those willing to participate were requested to complete a form to supply certain necessary information (Appendix A). The number of adults evidencing a desire to participate totalled 127.

Toward the end of November a letter was sent to each of these adults reminding him of the study and suggesting a time for his participation. Alternate times were provided for those for whom the suggested time was inconvenient. (Appendix A). In all, 102 adults participated in the study and 100 of the responses were used.

### Characteristics Studied

Information was collected from the participants about five socio-economic characteristics: sex, age, previous counselling, education, and occupation. The participants were classified by age into two sub-groups--under thirty years of age and thirty years of age or over. Two sub-groups were formed with regard to previous counselling--some previous counselling and no previous counselling. There were two sub-groups formed in terms of education--ten years of school or less and eleven years of school or more. Occupations were classified according to the Pineo-Porter Socio-Economic Status classifications (68). The six occupational classifications into which the male participants fell, ranging from semi-professional to unskilled, were reduced to two sub-groups. Occupational Group I contained those males in the occupational classifications of semi-professional; proprietors, managers, and officials, small; and clerical and sales. Occupational Group II contained those males in the occupational classifications of skilled, semi-skilled, and unskilled. Females were assigned to two sub-groups--employed and unemployed.

### DESIGN OF THE Q-SORT

The Q-sort consisted of fifty statements concerning functions of a counsellor in adult education. Guided by his personal evaluation of the importance of each item, a participant was required to place the items in one of nine piles arranged along a rank-order continuum with the whole making up a forced-normal distribution.

### Item Selection

Items were selected from books and articles in professional journals as well as published and unpublished studies relating to the counselling of adults, the psychology and sociology of adults, and adult learning. Each item was a positive statement of a counsellor function expressed from the position of the adult. All vocabulary employed conformed to Mitzel's Functional Reading Word List for Adults (61). From the sources indicated, a list of sixty-two items was obtained representing functions of the adult counsellor in relation to the adult student.

Consistent with the emphasis on the adult's viewpoint, a class of eighteen adults served as judges of the clarity of wording and general importance of the items. These adults were registered in credit evening courses at another centre in the Surrey School District, but were not part of the population employed in the study itself. As judges, they were requested to determine the clarity of wording of each item and the general importance of each item to them. In addition, they were asked to suggest other items. On the basis of majority decision, six items were deleted, two added, and a number of changes made in wording.

The fifty-eight items remaining were further selected by the writer to reduce repetition. This resulted in the development of a final Q-sort of fifty items.

### Category Selection

For statistical analysis the fifty items of the Q-sort were assigned to one of four categories of counsellor functions (Appendix B). These categories were

#### Category 1 • Educational Counselling (23 items)

These items concerned, in general, educational information and orientation, long-term educational planning, and educational adjustment services.

#### Category 2 • Occupational Counselling (6 items)

These items concerned occupational information and referral.



### Category 3 - Personal Counselling (7 items)

These items concerned personal adjustment, self understanding, and referral.

### Category 4 - Counsellor-Adult Relationship (14 items)

These items denoted functions by which a climate of mutual trust, understanding, and help might be established between the counsellor and the adult student.

### Pre-Test of the Instrument

To ascertain the ability of adult students to comprehend the instructions and perform the Q-sort satisfactorily, a pre-test was held using a group of twenty-seven adult students enrolled in evening courses in another school district similar to the one under study. As a result of this pre-test a few minor changes were made in the wording of the instructions.

## COLLECTION OF THE DATA

The Q-sort and the data sheet were administered to the participating adult students on eight consecutive school evenings during the first two weeks of December, 1969. As previously mentioned, each adult who indicated a willingness to participate was contacted by mail, and a time was suggested on an evening when he had a class. The reason for this procedure was to avoid inconvenience to the participant and to keep to manageable size the numbers to whom the Q-sort would be administered on any one evening. Provision was made for rescheduling those who could not attend at the designated time. Although the writer was present from an early hour each night, the majority of adults participated following their classes.

The Q-sort was administered by the writer whenever an adult arrived. Generally a brief introduction was given indicating the purpose of the study, stressing that it was not a test, and urging that the adult consider the items as they concerned him personally. The adult was then permitted to proceed with completing

the data sheet and performing the Q-sort. For greater ease of performance the Q-sort employed a five step procedure. Participants were encouraged to ask for assistance concerning any problems of procedure or interpretation, but few experienced any difficulty. The time required to complete the Q-sort and data sheet ranged from 30 minutes to 80 minutes with an average of approximately 45 minutes (Appendix C).

Reaction from the participants was almost wholly favourable and co-operation was high. The Q-sort was found interesting and challenging though some participants experienced difficulty with the forced choice procedure because of the need to distinguish among many functions which they considered important.

## STATISTICAL ANALYSIS

Each item was given an item value determined by the pile in which it was placed by each participant. Thus the single item in pile one (the most important item) was assigned a value of nine, each item in pile two was assigned a value of eight, and so on to pile nine in which the single item (the least important item) was assigned a value of one. This information and the coded responses to the data sheet were keypunched onto a separate computer card for each participant. Frequency tables were produced for the socio-economic characteristics of sex, age, previous counselling, education, and occupation.

The IBM 360 Computer of the University of British Columbia was used to compute mean item scores for the total population and for each subgroup. In addition, category scores were computed by totalling the values assigned each item in a category. For each subgroup a mean category score was then computed for each of the four categories of functions.

The Kruskal-Wallis one-way analysis of variance by ranks (81) was employed to test the central hypothesis that there is no statistically significant difference in the importance which adult students enrolled in credit courses in a public adult night school assign to various functions of an adult education counsellor.

Items in the total population and in each sub-group were ranked using their means. The sum of the ranks in each category was then found. The Kruskal-Wallis test determines whether the sums of ranks are so disparate that they are not likely to have come from samples which are all drawn from the same population. Therefore, since the Kruskal-Wallis technique tests the null hypothesis that  $k$  independent samples come from the same population or from identical populations with respect to averages, an acceptance of the null hypothesis would indicate no significant differences in the importance assigned to the categories of functions. Conversely, a rejection of the null hypothesis would indicate significant differences in the importance assigned, and would suggest further investigation of the contributing factors.

The technique of Multiple Comparisons using Rank Sums as found in Dunn (29) was employed on the total population and the sub-groups to determine those categories of functions contributing to any differences in importance as shown by the Kruskal-Wallis test. Through the use of three matrices various combinations were investigated (Table I).

The sub-hypotheses concerning possible statistically significant differences between various pairs of sub-groups with regard to the importance which they assigned to various functions of an adult education counsellor were tested by  $t$  tests of the category scores. Where significance was suggested, the non-parametric Wilcoxon Matched-Pairs Signed-Ranks test (81) was employed to corroborate this.

## LIMITATIONS

The following limitations were observed in the study:

1. The participants attended evening classes in School District Number 36, District of Surrey and City of White Rock, British Columbia, and were enrolled in classes for secondary school credit.
2. From volunteers a panel of one hundred adults was studied.
3. Counsellor functions used in the Q-sort were those which directly involved both the counsellor and the adult student.

TABLE I  
MATRICES FOR MULTIPLE COMPARISONS

---

MATRIX A		
1. Educational Counselling	vs.	Occupational Counselling
2. Educational + Occupational Counselling	vs.	Personal Counselling + Counsellor-Adult Relationship
3. Personal Counselling	vs.	Counsellor-Adult Relationship

---

MATRIX B		
1. Educational Counselling	vs.	Counsellor-Adult Relationship
2. Occupational Counselling	vs.	Personal Counselling
3. Occupational + Personal Counselling	vs.	Educational Counselling + Counsellor-Adult Relationship

---

MATRIX C		
1. Educational Counselling	vs.	Personal Counselling
2. Occupational Counselling	vs.	Counsellor-Adult Relationship
3. Occupational Counselling + Counsellor-Adult Relationship	vs.	Educational + Personal Counselling

---

## DEFINITION OF TERMS

Though more comprehensive definitions can be found, the following were employed as being better understood by the adult participants.

Counsellor. The person who, through direct personal contact with the adult student, has as his principal responsibility to assist the adult in educational and vocational planning and personal-social adjustment.

Function. An action, duty, or responsibility of the adult counsellor.

## CHAPTER II

### REVIEW OF THE LITERATURE

Literature on the counselling of adults is limited, and that with direct reference to public school adult education is even more limited. Other than a minimal amount of research at the university level (97), studies on counsellor role or function have been confined largely to elementary and secondary schools, and even there the population consulted has normally consisted of administrators, teachers, parents, and counsellors themselves rather than students (5, 72, 76, 77, 79). In reviewing a number of these studies Tyler (94) and Roeber (74) concluded that students at the college or university level attached most significance to the counsellor's help with vocational choice, while high school students defined the counsellor's role primarily in terms of assistance with educational and vocational problems although the counsellors themselves preferred to deal with personal and social concerns.

As no research could be found directly related to the present study, the literature reviewed below concerned the counselling of adults, and adult psychology, sociology, and learning. From these sources were obtained most of the functions of the adult counsellor used in the Q-sort. In addition, this literature suggested variables to be considered in the study. Material concerning the use of the Q-sort technique in similar studies and in educational research has also been reviewed.

## LITERATURE ON THE COUNSELLING OF ADULTS

### Emphasis in Counselling

The areas of emphasis in counselling adults have been the subject of much divergent opinion. Warman (97), in an attitude survey of different campus groups at university, found that students ranked vocational choice help first, help about college routine second, and help with adjustment to one's self and others last. Ryska (75), in surveying fifty-nine evening colleges, concluded that the counsellor needed great breadth and depth in the knowledge of educational and occupational information and of resource materials.

Two surveys of public school adult guidance indicated the emphasis being given. One study of thirty public school adult guidance services carried out by Presgraves (70) showed that only fifteen had counselling services of which the major types were educational, vocational, and personal-social. Stewart (85), in surveying guidance in Los Angeles city adult schools, found a predominance of educational over vocational counselling, limited data on the students, little attention to the students' interests, aptitudes, preferences, personality, and work experience, a drain on the counsellors' time through clerical duties, lack of suitable training, and poor follow-up procedures.

Ballin and Logie (4) described the success of a group guidance program which stressed vocational counselling and the study of occupational information, while Plummer (69), as the result of a course concerned with the discussion and testing of interests, aptitudes, and personality, concluded that adults were more interested in improving themselves intellectually than in vocational improvement. Verner (95:61) suggested that the adult was less in need of vocational advice and more in need of educational and social guidance. For Kaback (91:27) the essence of counselling was the relationship, for she felt that rightly or wrongly the counsellor served as a model and represented education to the adult. Kidd (44:222) contended that the emphasis not be on giving information or advice but on helping the adult learn how to come to terms with himself, accept his strengths and weaknesses, and begin to be self-managing. Novack and Weiant (65) expressed

a similar view. Awareness of the maturational process and life changes as a means to promoting individual growth and personal responsibility were urged by Vontress and Thomas (96). Campion (15) felt that adults' needs would be met through individual consultation for specific knowledge of educational and occupational matters, group counselling for general assistance, and teacher guidance to aid with specific skills and knowledge. Cassel and Clark (17) described a comprehensive testing program as a means for increasing the effectiveness of educational, vocational, and personal guidance, while Peterson and Robinson (66) claimed the effectiveness of a clinic at which counsellors from various agencies united to counsel local adults regarding educational and vocational opportunities and community programs. Thatcher (89:120) viewed the primary purposes of public school adult education and, by implication, of counselling, as helping adults enter the best educational programs for them and helping them make those adjustments which would allow them to profit fully from their educational experiences. Noting the numerous functions which the counsellor already had, Collins (21) rejected the image of the counsellor as a clinical psychologist and advocated that he be trained for the function of vocational and educational counselling. Similar insistence that the counsellor avoid a psychotherapeutic role was voiced by Braund (10) and Aubrey (3).

### Techniques of Counselling

There was a decided scarcity of literature on techniques of counselling adults, duties of adult counsellors, and the organization and administration of guidance services in adult education. Klein and Moffitt (45) have written one of the few books with definite application to public school adult education. This was chiefly concerned with techniques and services and discussed the generally recognized areas of counsellor responsibility. Also pertinent were the works of Thatcher (89) dealing with the characteristics of adult students and with principles for counsellors, De Gabriele (25) on counselling services and techniques and the needs of and psychological and physiological changes in adults, and Counseling and Interviewing Adult Students, the handbook published by the National Association



of Public School Adult Education (62). Counselling techniques and the concerns, especially vocational, of various groups of adults were dealt with by Thoroman (92). Parts of works for college and university counsellors, such as Student Personnel Services for Adults in Higher Education (31), had application to counselling in public school adult education. Beyond these the adult counsellor is generally obliged to consult material specifically for elementary and secondary school counsellors.

### Counsellor Preparation

While admitting the necessity of employing part-time counsellors, usually from elementary or secondary levels of education, many writers urged programs by which counsellors could acquire adequate preparation for dealing with adults--a task for which they felt specialized training was essential. Whiteley (100) regretted that the bulk of literature on counselling did not deal with what the counsellor was to accomplish and how he was to accomplish it. Verner (95:61) contended that the ideal adult counsellor should be trained both as a clinical psychologist and an adult educator. As the result of his study, Dannenmaier (23) concluded that generalized training of counsellors was possible for all levels of education and that it was feasible to employ high school counsellors in counselling situations involving adults.

The teacher was occasionally suggested of value for counselling in planning, evaluation, and problem solving in the subject area (9, 39, 62), but, in general, opinion was opposed to the professional counsellor having a teaching role.

Westervelt (99:147-150), in an overview of counselling adults in continuing education, enumerated what she felt to be the needed competencies of the counsellor. These were

1. supervised practice in counselling with the kinds of clients with whom the counsellor planned to work;
2. skill in acquiring and disseminating educational and occupational information;
3. some understanding of learning theory and adult learning characteristics;

4. some understanding of the sociological and psychological characteristics of adults;
5. understanding of the nature of the system or systems in or with which the counsellor would be working.

### Vocational Counselling

Vocational counselling for adults and the assistance the counsellor could offer regarding the problems and needs of women, the seriously disabled, senior citizens, and other groups was dealt with by Thoroman (92). Williamson (102) criticized the use of untrained personnel in giving occupational information, the counsellors' lack of knowledge concerning testing, and the over dependence placed on the adult's self-analysis in determining possible occupations. Westervelt (99:146-147), while admitting similarities between vocational counselling and counselling in continuing education, nevertheless stressed the greater emphasis which the latter had to place on educational counselling, the greater concern of adults in continuing education with their ability to learn, and the need for the counsellor in continuing education to work with and in educational systems, the majority of whose students and staff were part-time.

### Counselling of Women

Many writers urged particular attention to the needs of women. Thoroman (92:95) indicated that in 1964 one person of every four in the American labour force was a woman. He viewed women's needs as not only economic, but also those of status, prestige, and social acceptance. Of particular concern were women entering full-time employment for the first time and older women and working widows. Westervelt (99:150) cited the lack of identity felt by those holding humble positions or, like the housewife, no position at all. Berry (6), in predicting changing roles for women in the 1980's, underscored the need for specialized training for counsellors of women. Dolan (28) found lack of self confidence and lack of information the two major problems experienced by women thirty-five to fifty-four years old. The need for expanded educational and vocational counselling for women returning to work was expressed by Lichtenstein and Block (49).

## LITERATURE ON ADULT SOCIOLOGY, PSYCHOLOGY, AND LEARNING

### Adult Sociology

Literature on the counselling of adults invariably alluded to the importance of a developmental approach. Weidner (98:5) saw the need for "continuing guidance in relation to continuing education; to relate guidance to the need for lifelong learning in our changing society." Blocher (8:1) approached counselling from "the process of human development organized around life stages and elaborated in terms of social roles, developmental tasks, and coping behaviors."

Emphasis was usually placed on the differences between adults and pre-adults, and between adults themselves. Thompson (90) noted five of the basic differences:

1. An adult has a different self-concept from the youth when he comes into a learning situation;
2. An adult comes into a learning situation with a body of experience;
3. An adult enters into a learning situation with a different set of developmental tasks. For the adult, developmental tasks can be broken down generally into three stages--early adult years (18-30); middle adult years (30-55); and later maturity (over 55);
4. An adult enters into a learning situation for immediate use of the learning to solve immediate life problems;
5. An adult enters in the learning situation voluntarily.

Westervelt (99:150) emphasized the wider age range of adults as compared with pre-adults and the fact that adults, having achieved some identity, did not need a replica of the services offered younger students, but help from a visible, accessible person in integrating education with the whole of their current activities and needs. Adolph (1) found that with a selected group of adults in credit courses those under age twenty-one viewed adult education as a ticket to a better job, those age twenty-two to thirty-two saw it as a second chance for education and for its remedial aspects in relation to occupation, and those over age thirty-two saw it to keep up with progress. Though both sexes were highly favourable, he found women

more favourable to adult education than men. Chapman (19) was of the opinion that adults returned to education for leisure time skills, social skills, cultural-intellectual interests, economic advancement, and educational advancement, while Dobbs (27) reported self-perceived educational needs of adults to show that they put educational needs secondary to economic ones, thus leading him to strongly recommend greater consideration for the expressed needs of adults.

Havighurst (36) made significant contributions in suggesting two ways of thinking about development during adulthood--developmental tasks and social roles. Adult education was necessary, he believed, for competence in work, as a means of maintaining engagement with society, and as a means of expression. For those "interested in understanding the adult part of life, and in developing programs of adult education and guidance" he suggested that there were eight dominant concerns governing the behaviour of a person during stages of his life. These were

1. 0 - 10      Coming into independent existence
2. 10 - 20     Becoming a person in one's life
3. 20 - 30     Focussing one's life
4. 30 - 40     Collecting one's energies
5. 40 - 50     Exerting and asserting oneself
6. 50 - 60     Maintaining position and changing roles
7. 60 - 70     Deciding whether to disengage and how
8. 70 - 80     Making the most of disengagement

From a vocational viewpoint, Miller and Form (59) presented a sociological classification of life stages in work periods and types of career patterns. Noting the dearth of similar studies concerning women, Super (87) advanced a possible classification of women's career patterns. Berry (7) also suggested general career patterns among women.

### Adult Psychology

In the field of psychology, Maslow (54) and Erikson (30) have formulated theories providing a framework for an understanding of the developmental processes and crises of adults. Westervelt (99:148), however, expressed concern that "no period of human life has been less studied from the point of view of normal psychology as opposed to psychopathology than has the period between twenty and sixty years of age." With adulthood Erikson associated the psychological tasks of the achievement of identity (late adolescence, and sometimes, early 20's), intimacy (20's and 30's), generativity (40's and 50's), and integrity (60's and 70's). Maslow (55) noted two types of learning--extrinsic and intrinsic. He viewed intrinsic learning, by which adults become all that they are capable of becoming, as the ultimate goal of adult education and of counselling. The counsellor's job, he perceived, as helping them to become what they already are more perfectly and to realize what they potentially can be. Comments on changing concepts and values in the adult life span were expressed by many writers including McClusky (57), De Gabriele (25), and Thatcher (89). Thoroman (92) stressed the importance of ego status in the adult's goal selection. Neugarten (63), in her study of personality changes during the adult years, saw forty as a time of major redirection of the ego from outer to inner concerns.

### Adult Learning

Literature on adult learning goes far toward dispelling the common fear of adults they are too old to learn. Lorge (52) found that learning ability, when not bound by stringent time limits, did not change significantly from age twenty to sixty years. Principles of adult learning and conditions which facilitate it were considered by Hendrickson (38), Pine and Horne (67), and Miller (60). Zahn (104) provided a summary of many of the major concepts regarding adult learning.

## LITERATURE ABOUT THE Q-SORT TECHNIQUE

Q methodology was a name assigned by William Stephenson (83) to a group of psychometric and statistical procedures which he developed. Q technique related to the procedures employed in carrying out Q methodology. Essentially this involved the sorting out of packs of cards called Q-sorts and the correlating of the responses of different individuals or different groups of individuals or factors.

As a psychological measurement tool, Q-sort has been used by Carl Rogers and his colleagues and students as a means of allowing clients to reveal their perceptions of themselves and others. From the results of these studies inferences could be drawn about personality and the results of therapy (43:586-7).

The worth of the Q-sort in educational research has been demonstrated by Kerlinger (42). Numerous studies of perceptions of the high school counsellor's role have employed this instrument (5, 35, 41, 76), but there was no suggestion in the literature that it has been used regarding the adult counsellor.

Q methodology has been both praised and criticized. Kerlinger viewed it as a flexible and useful tool for the psychological and educational investigator. It could profitably be used for comparing the characteristics of groups of individuals with regard to their relations within the group. He felt that the novel approach of Q methodology made it interesting to most people (43:592-594).

Cronbach saw value in the forced choice procedure of the Q-sort.

In the Q-sort we have a variant of the forced choice procedure which has so many psychometric advantages. For one thing, this method of interrogation is much more penetrating than the common questionnaire where the person can say "Yes" to all the favorable symptoms and "No" to all the unfavorable ones. The method is free from these ideosyncracies of response which cause some persons to respond "Cannot say" twice as often as others, and so make their scores noncomparable.

The forced choice requires every person to put himself on the measuring scale in much the same manner. Since more statements are placed in the middle pile, the subject is freed from many difficult and rather unimportant discriminations he would have to make if he were forced to rank every statement. (22:378-379).

Among the disadvantages, Kerlinger cited the matter of sampling. Q was not a method well-suited to cross-sectional or large sample purposes. On the other hand, he pointed out that one should not wish to generalize to populations, but rather to test theories on small sets of individuals chosen for specific characteristics. With them it was possible to explore unknown areas and variables for their identity and interrelations. Regarding the forced nature of the Q-sort, Kerlinger believed that more criticism and dissatisfaction was inferred by those who opposed forced choices than was actually experienced by participants in such studies. He suggested that the advantage of forcing individuals to make discriminations that they often would not make unless required to do so outweighed any disadvantages (43:594-598).

## CHAPTER III

### DATA ANALYSIS AND RESULTS

The results of the study are presented in five sections. The first contains the distribution of the participating adult students according to the socio-economic characteristics under consideration. Following this is the analysis of the Q-sorts to test the central hypothesis. The third section presents the analysis of data to determine the types of functions considered significantly more important by the total population and by each sub-group. The testing of the sub-hypotheses by the analysis of differences between pairs of sub-groups constitutes the fourth section. The last section contains an examination of the items selected most important and least important by the total population.

#### DISTRIBUTION OF PARTICIPANTS ACCORDING TO SOCIO-ECONOMIC CHARACTERISTICS

As indicated in the preceding chapter, one hundred adult students constituted the panel used. All were enrolled in credit courses in the public adult night school program of the Surrey School District.



Of this total population, fifty were males and fifty were females. In the case of both males and females, twenty-five were under 30 years of age and twenty-five were 30 years of age or over.

A total of forty-nine adults (twenty males and twenty-nine females) had received some previous counselling either in elementary school or secondary school, while the remaining fifty-one adults (thirty males and twenty-one females) had received no previous counselling.

With respect to education, a total of forty adults (twenty-two males and eighteen females) had completed ten years of school or less, while the remaining sixty adults (twenty-eight males and thirty-two females) had completed eleven years of school or more (Table II).

TABLE II  
DISTRIBUTION OF PARTICIPANTS BY SEX, AGE, PREVIOUS  
COUNSELLING, AND EDUCATION

Socio-Economic Groups	Total No.	Males		Females	
		No.	%	No.	%
Under 30 years of age	50	25	50.0	25	50.0
30 years of age or over	50	25	50.0	25	50.0
Some previous counselling	49	20	40.8	29	59.2
No previous counselling	51	30	58.8	21	41.2
10 years of school or less	40	22	55.0	18	45.0
11 years of school or more	60	28	46.7	32	53.3

Of the fifty males involved in the study, nineteen (nine under 30 years of age and ten 30 years of age or over) were assigned to Occupational Group I constituting the Pineo-Porter Socio-Economic Status classifications of semi-professional; proprietors, managers, and officials, small; clerical and sales. The remaining thirty-one males (sixteen under 30 years of age and fifteen 30 years of age or over) were assigned to Occupational Group II constituting the

Pineo-Porter Socio-Economic Status classifications of skilled; semi-skilled; unskilled. Twenty-five of the fifty females were employed; twenty-five were unemployed (Table III).

TABLE III  
DISTRIBUTION OF PARTICIPANTS BY AGE, SEX,  
AND OCCUPATION

Sex and Occupational Status	Total No.	Under 30 Years of Age		30 Years of Age or Over	
		No.	%	No.	%
Males Group I (semi-professional; proprietors, managers and officials, small; clerical and sales)	19	9	47.4	10	52.6
Males Group II (skilled, semi-skilled, unskilled)	31	16	51.6	15	48.4
Employed females	25	16	64.0	9	36.0
Unemployed females	25	9	36.0	16	64.0

#### ANALYSIS TO DETERMINE SIGNIFICANT DIFFERENCES IN THE IMPORTANCE ASSIGNED TO VARIOUS COUNSELLOR FUNCTIONS

It was contended in the central hypothesis that there would be no statistically significant differences among adults enrolled in credit courses in a public adult night school in the importance which they assigned to various functions of an adult education counsellor.

To provide more meaningful comparisons than might occur with individual items, the categories of counsellor functions were investigated: educational counselling, occupational counselling, personal counselling, and the counsellor's

adult relationship. The Kruskal-Wallis analysis of variance by ranks was employed to determine whether there were significant differences in the importance assigned to the four categories of functions. This technique tested the null hypothesis that there were no differences. Since the chosen level of significance was .05, the region of rejection consisted of any value of the statistic  $H$  which was so large that the probability associated with its occurrence was equal to or less than  $\alpha = .05$ .

### Total Population

In the total population the  $H$  value was significant at the .01 level thus calling for the rejection of the null hypothesis. It can be concluded that in the total population significantly more importance was assigned to certain functions of an adult education counsellor than to others (Table IV).

### Sub-groups

The Kruskal-Wallis test was used with each sub-group to determine whether there were significant differences in the importance assigned to the four categories of counsellor functions as a result of sex, age, previous counselling, education, and occupation (Table IV).

#### Sex

Among those of either sex the  $H$  values were significant at the .01 level. Consequently the null hypothesis of no significant differences by reason of sex is rejected. Significantly more importance was assigned to certain functions of an adult education counsellor than to others regardless of sex.

#### Age

In the male groups of under 30 years of age and 30 years or over, the  $H$  values were significant at the .01 and .02 levels respectively. In the female groups of under 30 years of age and 30 years or over, the  $H$  values were significant at the .001 and .01 levels respectively. The null hypothesis of no significant

TABLE IV  
DIFFERENCES IN THE IMPORTANCE ASSIGNED TO THE FOUR  
CATEGORIES OF COUNSELLOR FUNCTIONS  
KRUSKAL-WALLIS ONE-WAY ANALYSIS OF VARIANCE BY RANKS

Total Population and Socio-Economic Sub-groups	H*	Level of Statistical Significance
Total Population	13.4657	.01
Males	12.583	.01
Females	15.64	.01
Males under 30 years of age	12.7232	.01
Males 30 years of age or over	10.6186	.02
Females under 30 years of age	18.4121	.001
Females 30 years of age or over	12.9676	.01
Population with some previous counselling	13.31	.01
Population with no previous counselling	13.689	.01
Population having completed 10 years of school or less	13.70	.01
Population having completed 11 years of school or more	14.2497	.01
Males in Occupational Group I	7.8657	.05
Males in Occupational Group II	16.4573	.001
Employed females	20.75	.001
Unemployed females	12.78	.01

\* The statistic used in the Kruskal-Wallis one-way analysis of variance by ranks.

Level of significance = .05, d.f. = 3

An example of this test is found in Appendix D.

differences by reason of age is rejected. Thus it can be concluded that significantly more importance was assigned to certain functions of an adult education counsellor than to others with respect to age groups by sex.

#### Previous Counselling

In both the group with some previous counselling and the group with no previous counselling the H values were significant at the .01 level; consequently, the null hypothesis of no significant differences by reason of previous counselling is rejected. With respect to previous counselling significantly more importance was assigned to certain functions of an adult education counsellor than to others.

#### Education

In both the group having completed 10 years of school or less and the group having completed 11 years of school or more the H values were significant at the .01 level. The null hypothesis of no significant differences by reason of education is rejected. Significantly more importance was assigned to certain functions of an adult education counsellor than to others with respect to level of education.

#### Occupation

In the male Occupational Group I and the male Occupational Group II, the H values were significant at the .05 and .001 levels respectively. In both the employed and the unemployed female groups, the H values were significant at the .001 and .01 levels respectively. The null hypothesis of no significant differences by reason of occupation is rejected. Thus it can be concluded that with respect to occupation significantly more importance was assigned to certain functions of an adult education counsellor than to others.

#### Summary

In the total population and in each of the sub-groups H values of the Kruskal-Wallis test were significant at the chosen level of .05. This called for

the rejection of the null hypothesis in each case. Consequently, the central hypothesis was also rejected. It can be concluded that in the total population and in each of the sub-groups established by sex, age, previous counselling, education, and occupation, there were statistically significant differences in the importance assigned to various functions of an adult education counsellor.

In the total population and in most of the sub-groups the significance level was at .01 indicating a pronounced preference for certain functions over others. In the female group under 30 years of age, the male Occupational Group II and the employed female group, significance was at the .001 level. Only the male Occupational Group I had a level of significance bordering on .05.

#### COUNSELLOR FUNCTIONS CONSIDERED SIGNIFICANTLY MORE IMPORTANT

By the Kruskal-Wallis test it was found that the population studied assigned significantly more importance to certain functions of an adult education counsellor than to others. To determine which functions were considered the more important ones, Dunn's method of multiple comparisons using rank sums was employed (29). By constructing three matrices it was possible to compare each category of functions with each of the other three (Table I). Because each matrix involved three comparisons, the significance level of each comparison in a matrix was equal to  $\frac{.05}{2p}$  or .0083 in order to be in accordance with the overall significance level of .05. Thus, since the null hypothesis was tested, the region of rejection for each individual comparison consisted of any value which was so large that the probability associated with its occurrence was equal to or less than .0083.

#### Matrix A

Matrix A provided comparisons between the following functions:

1. educational counselling versus occupational counselling;

2. educational and occupational counselling versus personal counselling and counsellor-adult relationship;
3. personal counselling versus counsellor-adult relationship (Table V).

In the total population and in the sub-groups established by sex, age, previous counselling, education, and occupation, no significant differences were found in the importance assigned to educational counselling as compared with occupational counselling.

In the total population the combination of educational and occupational counselling was found significantly more important at the .0005 level than was the combination of personal counselling and the counsellor-adult relationship. With respect to sex the difference was significant in the male group at the .0048 level and in the female group at the .0001 level. The difference by age was significant at the .0031 level in the male group under 30 years of age, but was not significant in the male group 30 years of age or over; the difference was significant in both the female group under 30 years of age at the .00005 level and the female group 30 years of age or over at the .00023 level. In terms of previous counselling the difference was significant in the group with previous counselling at the .0005 level and in the group with no previous counselling at the .0025 level. On the basis of education there was a significant difference in the group having completed 10 years of school or less at the .0026 level and in the group having completed 11 years of school or more at the .00023 level. The difference by occupation was not significant in the male Occupational Group I, but was significant in the male Occupational Group II at the .018 level. In the employed female group at the .00003 level and in the unemployed female group at the .0045 level, the difference was significant.

In the total population and in the sub-groups established in terms of sex, age, previous counselling, education, and occupation, no significant differences were found in the importance assigned to personal counselling as compared with the counsellor-adult relationship.

TABLE V  
RELATIVE IMPORTANCE ASSIGNED TO THE FOUR CATEGORIES  
OF FUNCTIONS  
MULTIPLE COMPARISONS USING RANK SUMS (DUNN)

MATRIX A\*

Total Population and Socio- Economic Sub-groups	Educational counselling vs. occupa- tional counselling	Educational and occupa- tional counselling vs. personal counselling & counsellor- adult rela- tionship	Personal counselling vs. counsellor- adult rela- tionship
Total Population	.1335	<u>.0005</u>	.1357
Males	.0582	<u>.0048</u>	.1660
Females	.2389	<u>.0001</u>	.1003
Males under 30 years of age	.0764	<u>.0031</u>	.1515
Males 30 years of age or over	.0749	<u>.0084</u>	.2061
Females under 30 years of age	.1660	<u>.00005</u>	.1423
Females 30 years of age or over	.3520	<u>.00023</u>	.0630
Population with some previous counselling	.2061	<u>.0005</u>	.1562
Population with no previous counselling	.0643	<u>.0025</u>	.1170
Population having completed 10 years of school or less	.0668	<u>.0026</u>	.0869
Population having completed 11 years of school or more	.2358	<u>.00023</u>	.1685
Males in Occupational Group I	.1112	<u>.0188</u>	.2946
Males in Occupational Group II	.0329	<u>.0018</u>	.1314
Employed females	.3632	<u>.00003</u>	.3156
Unemployed females	.0808	<u>.0045</u>	.0336

\* The values in the cells indicate the exact probability under the null hypothesis. The values less than  $\alpha = \frac{.05}{2p}$  are underlined in accordance with the chosen overall level of significance of .05.

An example of this test is found in Appendix D.



### Matrix B

Matrix B provided comparisons between the following functions:

1. educational counselling versus counsellor-adult relationship;
2. occupational counselling versus personal counselling;
3. occupational and personal counselling versus educational counselling and counsellor-adult relationship ( Table VI).

In the total population educational counselling was found significantly more important at the .0041 level than the counsellor-adult relationship. With respect to sex the difference was significant in the male group at the .0048 level and in the female group at the .003 level. The difference by age was significant at the .0048 level in the male group under 30 years of age and at the .0075 level in the male group 30 years of age or over; in the female group under 30 years of age the difference was significant at the .0007 level, but it was not significant in the female group 30 years of age or over. In relation to previous counselling the difference was significant in the group with previous counselling at the .0037 level and the group with no previous counselling at the .0048 level. In terms of education a significant difference was found in the group having completed 10 years of school or less at the .0071 level and in the group having completed 11 years of school or more at the .0024 level. The difference on the basis of occupation was not significant in the male Occupational Group I, but was significant in the male Occupational Group II at the .0016 level. In the employed female group, the difference was significant at the .00023 level, but it was not significant in the unemployed female group.

Occupational counselling was found significantly more important than personal counselling in the employed female group at the .0023 level. The difference was not significant in the total population or in the other sub-groups established in terms of sex, age, previous counselling, education, and occupation.

In the total population and in the sub-groups established on the basis of sex, age, previous counselling, education, and occupation, no significant differences were found in the importance assigned to the combination of occupational

TABLE VI  
RELATIVE IMPORTANCE ASSIGNED TO THE FOUR  
CATEGORIES OF FUNCTIONS  
MULTIPLE COMPARISONS USING RANK SUMS (DUNN)

MATRIX B\*

	Educational counselling vs. coun- sellor-adult relationship	Occupational counselling vs. personal counselling	Occupational & personal counselling vs. educational counselling & counsellor- adult relationship
Total Population and Socio- Economic Sub-groups			
Total Population	<u>.0041</u>	.0537	.0582
Males	<u>.0048</u>	.1379	.0351
Females	<u>.003</u>	.0158	.0778
Males under 30 years of age	<u>.0048</u>	.1056	.0401
Males 30 years of age or over	<u>.0075</u>	.1660	.0526
Females under 30 years of age	<u>.0007</u>	.0202	.0735
Females 30 years of age or over	<u>.0146</u>	.0110	.0869
Population with some previous counselling	<u>.0037</u>	.0367	.0951
Population with no previous counselling	<u>.0048</u>	.0951	.0268
Population having completed 10 years of school or less	<u>.0071</u>	.0823	.0207
Population having completed 11 years of school or more	<u>.0024</u>	.0274	.1131
Males in Occupational Group I	<u>.0132</u>	.2148	.1038
Males in Occupational Group II	<u>.0016</u>	.1151	.0174
Employed females	<u>.00023</u>	.0023	.4641
Unemployed females	<u>.0287</u>	.0643	.0104

\* The values in the cells indicate the exact probability under the null hypothesis. The values less than  $\alpha = \frac{.05}{2p}$  are underlined in accordance

with the chosen overall level of significance of .05.

An example of this test is found in Appendix D.

and personal counselling as compared with the combination of educational counselling and the counsellor-adult relationship.

### Matrix C

Matrix C provided comparisons between the following functions:

1. educational counselling versus personal counselling;
2. occupational counselling versus counsellor-adult relationship;
3. occupational counselling and counsellor-adult relationship versus educational and personal counselling (Table VII).

In the total population educational counselling was found significantly more important than personal counselling at the .0007 level. With respect to sex the difference was significant in the male group at the .0011 level and in the female group at the .00023 level. The difference by age was significant at the .0009 level in the male group under 30 years of age and at the .0026 level in the male group 30 years of age or over; in the female group under 30 years of age the difference was significant at the .00016 level and in the female group 30 years of age or over at the .0005 level. In terms of previous counselling the difference was significant in the group with previous counselling at the .0007 level and the group with no previous counselling at the .0005 level. On the basis of education the difference was significant in the group having completed 10 years of school or less at the .0003 level and in the group having completed 11 years of school or more at the .0007 level. The difference by occupation was not significant in the male Occupational Group I, but was significant in the male Occupational Group II at the .00023 level. There was a significant difference found in both the employed and unemployed female groups at the .0005 and .0003 levels respectively.

In the employed female group occupational counselling was found significantly more important at the .0027 level than the counsellor-adult relationship. The difference was not significant in the total population or in the other sub-groups by sex, age, previous counselling, education, and occupation.

TABLE VII  
RELATIVE IMPORTANCE ASSIGNED TO THE FOUR  
CATEGORIES OF FUNCTIONS  
MULTIPLE COMPARISONS USING RANK SUMS (DUNN)  
MATRIX C\*

	Educational counselling vs. personal counselling	Occupational counselling vs. coun- sellor-adult relationship	Occupational counselling & counsellor- adult relation- ship vs. educational & personal counselling
Total Population and Socio- Economic Sub-groups			
Total Population	<u>.0007</u>	.2148	.50
Males	<u>.0011</u>	.3707	.3192
Females	<u>.00023</u>	.1056	.3228
Males under 30 years of age	<u>.0009</u>	.3264	.3783
Males 30 years of age or over	<u>.0026</u>	.3707	.3121
Females under 30 years of age	<u>.00016</u>	.0918	.4681
Females 30 years of age or over	<u>.0005</u>	.1230	.1788
Population with some previous counselling	<u>.0007</u>	.1379	.4404
Population with no previous counselling	<u>.0005</u>	.3557	.4013
Population having completed 10 years of school or less	<u>.0003</u>	.3821	.4602
Population having completed 11 years of school or more	<u>.0007</u>	.1003	.4207
Males in Occupational Group I	<u>.0102</u>	.3483	.2946
Males in Occupational Group II	<u>.00023</u>	.3783	.2843
Employed females	<u>.0005</u>	.0027	.2546
Unemployed females	<u>.0003</u>	.4840	.3632

\* The values in the cells indicate the exact probability under the null hypothesis. The values less than  $\alpha = \frac{.05}{2p}$  are underlined in accordance with the chosen overall level of significance of .05.

An example of this test is found in Appendix D.

In the total population and in the sub-groups established in terms of sex, age, previous counselling, education, and occupation, no significant differences were found in the importance assigned to the combination of occupational counselling and the counsellor-adult relationship as compared with the combination of educational and personal counselling.

#### Summary of Significant Results by Multiple Comparisons (Table VIII)

In the total population and in the sub-groups established in terms of sex, previous counselling, and education, educational counselling was found significantly more important than either personal counselling or the counsellor-adult relationship, and the combination of educational and occupational counselling was considered significantly more important than the combination of personal counselling and the counsellor-adult relationship.

By age, both the male group under 30 years of age and the female group under 30 years of age produced the same significant results as those found in the total population. In the male group 30 years of age or over only two results were significant: educational counselling was more important than either personal counselling or the counsellor-adult relationship. Only two results were significant in the female group 30 years of age or over: educational counselling was more important than personal counselling and the combination of educational and occupational counselling was more important than the combination of personal counselling and the counsellor-adult relationship.

On the basis of occupation a more varied picture resulted. Comparisons in the male Occupational Group I produced no significant results, while the male Occupational Group II arrived at the same significant results as those found in the total population. The employed female group considered educational counselling significantly more important than either personal counselling or the counsellor-adult relationship, occupational counselling significantly more important than

TABLE VIII  
SUMMARY OF SIGNIFICANT RESULTS BY MULTIPLE COMPARISONS\*

	Matrix A	Matrix B	Matrix C
Total Population and Socio-Economic Sub-groups	Educational & Occupational Counselling vs. Personal Counselling & Counsellor's adult relationship	Educational counselling vs. counsellor's adult relationship	Occupational counselling vs. personal counselling
Total Population	.0005	.0041	.0007
Males	.0048	.0048	.0011
Females	.0001	.003	.00023
Males under 30 years of age	.0031	.0048	.0009
Males 30 years of age or over		.0075	.0026
Females under 30 years of age	.00005	.0007	.00016
Females 30 years of age or over	.00023		.0005
Population with some previous counselling	.0005	.0037	.0007
Population with no previous counselling	.0025	.0048	.0005
Population having completed 10 years of school or less	.0026	.0071	.0003
Population having completed 11 years of school or more	.00023	.0024	.0007
Males in Occupational Group I			
Males in Occupational Group II	.0018	.0016	.00023
Employed females	.00003	.00023	.0005
Unemployed females	.0045		.0003

\* The values in the cells indicate the exact probability under  $H_0$ . Only significant values are given.

either personal counselling or the counsellor-adult relationship, and the combination of educational and occupational counselling significantly more important than the combination of personal counselling and the counsellor-adult relationship. In the unemployed female group only two results were significant: educational counselling was more important than personal counselling and the combination of educational and occupational counselling was more important than the combination of personal counselling and the counsellor-adult relationship.

#### SIGNIFICANT DIFFERENCES BETWEEN PAIRS OF SUB-GROUPS WITH REGARD TO THE IMPORTANCE ASSIGNED TO VARIOUS COUNSELLOR FUNCTIONS

A number of sub-hypotheses were proposed to compare pairs of sub-groups by sex, age, previous counselling, education, and occupation as to possible significant differences in the importance which they assigned to various functions of an adult education counsellor. Investigation concerned the four categories of counsellor functions: educational counselling, occupational counselling, personal counselling, and counsellor-adult relationship.

Where significant differences were suggested by t tests, the Wilcoxon Matched Pairs Signed-Ranks test was employed as a non-parametric test to corroborate the findings. This technique tested the null hypothesis that there were no significant differences between a pair of sub-groups in the importance which they assigned to the four categories of functions. Since the chosen level of significance was .05, the region of rejection consisted of any value of the statistic T which was so large that the probability associated with its occurrence was equal to or less than  $\alpha = .05$  (Table IX).

TABLE IX  
SIGNIFICANT DIFFERENCES BETWEEN PAIRS OF SUB-GROUPS WITH  
REGARD TO THE IMPORTANCE ASSIGNED TO VARIOUS  
COUNSELLOR FUNCTIONS  
WILCOXON MATCHED-PAIRS SIGNED-RANK TEST

Pairs of Sub-groups	Values of T*			
	Educational Counselling	Occupational Counselling <sup>1</sup>	Personal Counsel- ling	Counsellor- adult rela- tionship <sup>2</sup>
Males vs. Females		0		
Employed females vs. unemployed females		0		14

\* The statistic of the Wilcoxon test, denoting the smaller of the sums of like-signed ranks. Values shown are significant at the .05 level. No significant differences were found between the pairs of sub-groups not listed.

An example of this test is found in Appendix D. <sup>1</sup> N = 6      <sup>2</sup> N = 14

### Sex

In the comparison between the male and female groups the T value of 0 for occupational counselling was significant at the .05 level. No significant differences were found with regard to the other categories of functions. Therefore, it can be concluded that in the comparison by sex significantly more importance was assigned to occupational counselling by the female group than by the male group.

### Age

In neither the comparison between the male group under 30 years of age and the male group 30 years of age or over nor that between the female group under 30 years of age and the female group 30 years of age or over were any significant differences found.



Therefore, it can be concluded that there were no significant differences between the pairs of sub-groups established on the basis of age in the importance which they assigned to various functions of an adult education counsellor.

### Previous Counselling

The group with some previous counselling and the group with no previous counselling did not differ significantly in the importance which they assigned counsellor functions. Therefore, it can be concluded that there were no significant differences between the pair of sub-groups established in terms of previous counselling in the importance which they assigned to various functions of an adult education counsellor.

### Education

The comparison between the group with 10 years of school or less and the group with 11 years of school or more produced no significant differences. Therefore, it can be concluded that there were no significant differences between the pair of sub-groups established by education in the importance which they assigned to various functions of an adult education counsellor.

### Occupation

In the comparison between the male Occupational Group I and the male Occupational Group II no significant differences were found. Therefore, it can be concluded that there were no significant differences between the pair of male occupational sub-groups in the importance which they assigned to various functions of an adult education counsellor.

In the comparison between the employed female group and the unemployed female group, the T value of 0 for occupational counselling and the T value of 14 for counsellor-adult relationship were significant at the .05 level. No significant differences were found with regard to the other two categories of counsellor functions. Therefore, it can be concluded that the employed female group assigned

significantly more importance to occupational counselling than did the unemployed female group, and that the unemployed female group assigned significantly more importance to the counsellor-adult relationship than did the employed female group.

## THE NINE MOST IMPORTANT AND THE NINE LEAST IMPORTANT ITEMS

The nine most important and the nine least important items as identified by the total population are listed in Tables X and XI.<sup>1</sup> Because one of the chief advantages of the Q-sort technique is that it forces individuals to make discriminations, the items placed in the extreme piles represent considered evaluations.

### The Nine Most Important Items

Eight of the nine most important items were educational counselling functions; the ninth dealt with the counsellor-adult relationship (Table X). The items chosen reflected the adult student's desire for practical assistance in selecting courses, establishing goals, and in better preparing himself for the learning experience.

### The Nine Least Important Items

Four of the nine least important items were personal counselling functions, three represented the counsellor-adult relationship, one was an occupational counselling function, and one an educational counselling function (Table XI). The items chosen indicated an independence on the part of the adult student. He was not interested in personal counselling. His relationship with the counsellor was viewed in the practical terms of seeking assistance in areas where he lacked information.

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<sup>1</sup> The nine most important and least important items in each of the subgroups are found in Appendix D.

TABLE X  
THE NINE MOST IMPORTANT ITEMS IN RANK ORDER

Rank of Item	Number of Item	Item	Category
1	1	to help me think out my educational needs and the course(s) most likely to satisfy those needs	Educational
2	27	to know and be able to explain the courses available	Educational
3	12	to explain the requirements for entering and completing various programs of study	Educational
4	8	to give me tests to help me understand my interests and ability and to discuss the results with me	Educational
5	4	to assist me in planning toward long-range educational goals	Educational
6	13	to inform me about other educational agencies if they offer courses more likely to satisfy my needs	Educational
7	19	to discuss problems I have in learning and ways I can help myself	Educational
8	15	to discuss how I can use my background and experiences to help me in my education	Educational
9	48	to make his advice and information practical	Counsellor-Adult Relationship

TABLE XI  
THE NINE LEAST IMPORTANT ITEMS IN RANK ORDER

Rank of Item	Number of Item	Item	Category
1	42	to help me learn how I can take part in class without making a fool of myself	Personal
2	44	to make me feel welcome and accepted	Counsellor- Adult Relationship
3	43	to help make arrangements for those who wish to discuss common interests or concerns	Personal
4	28	to pass on to teachers and administrators any suggestions which I have made	Counsellor- Adult Relationship
5	45	to treat me as an adult	Counsellor- Adult Relationship
6	5	to inform me about the school (for example, its rules, regulations, organization, services, etc.)	Educational
7	30	to provide letters of reference	Occupational
8	41	to help me express myself without putting words in my mouth	Personal
9	36	to help me understand myself better	Personal

## CHAPTER IV

### SUMMARY AND CONCLUSIONS

The importance of counselling adults in their continuing education has been widely recognized, but the peripheral nature of this service has permitted little research into the needs to be met and the essential functions to be performed. Differing emphases have been proposed, chiefly by adult educators or counsellors themselves, and psychological and sociological literature has pointed to changing needs at various life stages. The expressed needs of the adult student himself have seldom been sought, although knowing them would seem to offer an excellent way to utilize existing resources to fullest benefit and to suggest directions for future improvement.

### SUMMARY

The purpose of this study was to determine whether adult students enrolled in credit courses in a public night school assigned the same degree of importance to various functions of an adult education counsellor. A Quasi-sort of fifty items denoting counsellor functions was administered to a volunteer panel of one hundred students attending credit courses in the Surrey public adult night school

program. The items were classified into four categories--educational counselling, occupational counselling, personal counselling, counsellor-adult relationship--for analysis by the Kruskal-Wallis one-way analysis of variance by ranks.

### Testing of the Hypothesis

The central hypothesis postulated no statistically significant differences in the importance assigned to various functions of an adult education counsellor. This hypothesis was investigated with regard to the total population and to subgroups established on the socio-economic characteristics of sex, age, previous counselling, education, and occupation.

In the total population and in each of the subgroups the null hypothesis was rejected at the .05 level of significance, thus indicating that significantly more importance was assigned to some functions of an adult education counsellor than to others.

### Relative Importance of Functions

Dunn's method of multiple comparisons using rank sums was performed to ascertain the relative degree of importance assigned to various counselling functions by the total population and by the subgroups. The comparisons were made on three matrices with .05 as the chosen level of significance.

In the total population and in all subgroups with the exception of the male group 30 years of age or over and the male Occupational Group I, the combination of educational and occupational counselling was found significantly more important than the combination of personal counselling and the counsellor-adult relationship.

In the total population and in all subgroups with the exception of the female group 30 years of age or over, the unemployed female group, and the male Occupational Group I, educational counselling was found significantly more important than the counsellor-adult relationship.

In the total population and in all subgroups with the exception of the male Occupational Group I, educational counselling was found significantly more important than personal counselling.

In the employed female group occupational counselling was found significantly more important than either personal counselling or the counsellor-adult relationship.

Only in the male Occupational Group I was no counsellor function found significantly more important than any other.

### Testing of the Sub-Hypotheses

A number of sub-hypotheses were advanced to investigate differences between pairs of sub-groups regarding the importance which they assigned to various counsellor functions. These sub-hypotheses stated that there were no significant differences between pairs of sub-groups established by sex, age, previous counselling, education, and occupation in the importance which they assigned. The comparisons were performed by the Wilcoxon matched-pairs signed-ranks test with .05 as the chosen level of significance.

It was found that the female group regarded occupational counselling as significantly more important than did the male group. The employed female group considered occupational counselling significantly more important than did the unemployed female group. The unemployed female group considered the counsellor-adult relationship significantly more important than did the employed female group.

There were no significant differences between the pairs of sub-groups established with regard to age, previous counselling, or education.

### Most Important and Least Important Items

In the total population, eight of the nine most important items were educational counselling functions; the ninth concerned the counsellor-adult relationship. These items reflected the adult student's desire for practical assistance in selecting courses, establishing goals, and in better preparing himself for learning.

Of the nine least important items, four were personal counselling functions, three represented the counsellor-adult relationship, one was an occupational counselling function, and one an educational counselling function. These choices

illustrated the adult student's desire for independence, his rejection of personal counselling, and his concern in the counsellor-adult relationship chiefly for practical assistance.

## CONCLUSIONS

The results of this study do not lend themselves to sweeping generalizations; indeed, this objective is not the reason for such a study. Rather it is hoped that consideration of a specific and comparatively unexplored area can promote further research to support, refute, or more fully develop the findings obtained.

It has been demonstrated that, with regard to the population of one hundred volunteer adult students, certain functions of an adult education counsellor are considered more important than others, and that some groups of adults differ significantly from others in the degree of importance which they assign to specific functions.

From this study it is clear that the adult has a decided preference for educational and occupational counselling over personal counselling and functions concerned with his relationship with the counsellor. This finding suggests that the counsellor should know thoroughly not only the offerings of his own institution but also those of other institutions and of related educational services, such as testing services. In addition, the counsellor's assistance should not be bound by narrow parochialism. If another institution can better serve the adult, he should be advised of it.

The demands of the adult illustrate the necessity of the counsellor's possessing a basic knowledge of adult psychology, sociology, and adult learning theory. The immediacy of many of the adult's needs and his general concern with assistance on an individual basis must be recognized. The advice and assistance which he seeks is largely of a practical nature; he expects this to be supplied by a counsellor who is regularly available and accessible.



It is evident that the adult expects his privacy to be respected. If he wishes help of a personal nature, he may request it, but he does not appear to favour the counsellor's initiating such help or attempting to force it upon him. The least important items in the study indicated that the adult rejects any slighting of his intelligence through offers of assistance in areas that he feels are his own responsibility and no concern of the counsellor, such as his degree of participation in class, sense of acceptance, knowledge of rules, ability to express himself, and the like. In general, the adult views his relationship with the counsellor in terms of the practical assistance which the counsellor can offer, and shuns aspects which appear artificial.

The groups established with respect to occupation presented findings of value to the counsellor. The male group in the higher status occupations, although favouring educational and occupational counselling, was the only group not to show a significant preference for any one type of counsellor function. It may be inferred that this group recognizes its educational and occupational needs to the extent that it can give more consideration to other forms of assistance that the counsellor can offer. The male group in the lower status occupations, on the other hand, is more concerned with educational and occupational advancement.

The results of the study make it clear that more attention must be directed in the future to the peculiar needs of women. Employed women, especially those of a younger age, express a significant desire for occupational counselling, which places the onus on the counsellor to acquire more specialized knowledge concerning the changing place of women in the labour force and the occupational information related to their needs. Unemployed women, especially those of an older age group, display a general lack of self-confidence as reflected in the greater importance with which they regard the counsellor-adult relationship. Their need is for honest answers and assurance of their ability to belong in continuing education.

In summary, this study has shown differences in the importance assigned to various counsellor functions by the adult students themselves, definite indications of the areas which they feel the counsellor should serve, and differences between some groups of adults in the functions which they consider most important to them. In addition, the acceptance of the Q-sort technique by adult students points to its value for related studies, possibly with non-credit students.

## BIBLIOGRAPHY

1. Adolph, T. and Whalley, R.F. "Attitudes Toward Adult Education," Adult Education, XVII (Spring, 1967), pp. 152-156.
2. Allen, Lindley S. "Counseling Adults Poses Different Problems Than Counseling Day Students," Personnel and Guidance Journal, XL (February, 1964), pp. 622-623.
3. Aubrey, Roger F. "Misapplication of Therapy Models to School Counseling," Personnel and Guidance Journal, XLVIII (December, 1969), pp. 273-278.
4. Ballin, Marian R. and Logie, Iona R. "The Counseling of Adults, a Growing Community Need," Adult Leadership, VIII (January, 1960), pp. 200-201.
5. Bedi, Jaswant Singh. "Perceptions of the High School Counselor's Role." Unpublished doctoral dissertation, University of Nebraska State Teachers College, 1962.
6. Berry, Jane. "Counseling for Women's Roles in the 1980's." Guidance Personnel Work: Future Tense. Edited by Margaret Ruth Smith. New York: Teachers College Press, Columbia University, 1966.
7. Berry, Jane et al. Counseling Girls and Women - Awareness, Analysis, Action. Missouri State Department of Labor and Industrial Relations. Kansas City: Missouri University, 1966.
8. Blocher, Donald H. Developmental Counseling. New York: The Ronald Press Company, 1966.
9. Bordin, Edward S. The Teacher as a Counselor. Memo to the Faculty, Number 38. The University of Michigan, The Center for Research on Learning and Teaching, December, 1969.
10. Braund, John C. "The General Counselor and Counseling." Student Personnel Services for Adults in Higher Education. Martha L. Farmer. Metuchen, N.J.: The Scarecrow Press, Inc., 1967, pp. 150-162.
11. Brough, James R. "Sources of Student Perceptions of the Role of the Counselor," Personnel and Guidance Journal, XLIII (February, 1965), pp. 597-599.

12. Brunner, Edmund de S. et al. An Overview of Adult Education Research. Chicago: Adult Education Association, 1959.
13. Burns, Hobert W. (ed.) Sociological Backgrounds of Adult Education. Chicago: The Center for the Study of Liberal Education for Adults, 1964.
14. Campbell, William Giles. Form and Style in Thesis Writing. Boston: Houghton Mifflin Company, 1967.
15. Campion, H.A. "Counseling Services for Adults," California Journal of Secondary Education, XXVIII (1953), pp. 463-466.
16. Cantoni, Louis J. and Cantoni, Lucile E. "Counseling, A Larger Concept," Adult Leadership, XVI (October, 1967), p. 148 ff.
17. Cassel, Russell N. and Clark, Leland W. "The Fontana Adult School Testing Program," Adult Education, X (Spring, 1960), pp. 157-160.
18. Caughlan, James C. and Fullmer, Daniel W. "Developing a Counseling Center for Adults," Adult Education, X (Winter, 1960), pp. 80-84.
19. Chapman, C.E. "Some Characteristics of Adult Part-Time Students," Adult Education, X (Autumn, 1959), 10, pp. 27-41.
20. Clark, Burton R. "Knowledge, Industry, and Adult Competence," Sociological Backgrounds of Adult Education. Chicago: Center for the Study of Liberal Education for Adults, 1964.
21. Collins, Charles C. "Junior College Counseling: A Critical View," Personnel and Guidance Journal, XLIII (February, 1965), pp. 546-550.
22. Cronback, Lee J. "Correlations Between Persons as a Research Tool." Psychotherapy: Theory and Research. Edited by O. Hobart Mowrer. New York: Ronald Press, 1953.
23. Dannenmaier, William D. "Counselling Adults: A New Horizon or an Old Vista?" Adult Education, XIV (Winter, 1964), pp. 96-99.
24. De Crow, R. "Research and Investigation in Adult Education," Adult Education, XI (Winter, 1961), pp. 195-222.
25. De Gabriele, Eugene M. Guidance Services for Adults. Bulletin of the California State Department of Education, XXX (August, 1961).

26. Dickinson, J.G. "Patterns of Participation in a Public Adult Night School Program." Unpublished Master's thesis, University of British Columbia, 1966.
27. Dobbs, R.C. "Self Perceived Educational Needs of Adults," Adult Education, XVI (Winter, 1966), pp. 92-100.
28. Dolan, Eleanor F. et al. Counseling Techniques for Mature Women. Report of the Adult Counselor Program. (June 14 - August 6, 1965) Washington, D.C.: American Association of University Women.
29. Dunn, Olive J. "Multiple Comparisons Using Rank Sums," Technometrics, VI (1964), pp. 241-251.
30. Erikson, Erik H. Insight and Responsibility. New York: W.W. Norton and Company, Inc., 1964.
31. Farmer, Martha L. Student Personnel Services for Adults in Higher Education. Metuchen, N.J.: The Scarecrow Press, Inc., 1967.
32. Gazda, George M. and Ohlsen, Merle M. "Group Counseling-A Means of Parent Education," Adult Leadership, XIV (January, 1966), pp. 231 ff.
33. Gelatt, H.B. "School Guidance Programs," Review of Educational Research, XLIX (April, 1969), pp. 141-153.
34. Goldfaden, A. Robert. "Better Interviewing Techniques," Adult Leadership, VI (February, 1958), p. 211 ff.
35. Grant, Claude W. "The Counselor's Role," Personnel and Guidance Journal, XXXIII (1954), pp. 74-77.
36. Havighurst, Robert J. "Changing Status and Roles During the Adult Life Cycle: Significance for Adult Education," Sociological Backgrounds of Adult Education. Chicago: Center for the Study of Liberal Education for Adults, 1964.
37. Havighurst, Robert J. and Orr, Betty. Adult Education and Adult Needs. Chicago: Center for the Study of Liberal Education for Adults, 1956.
38. Hendrickson, Andrew. "Adult Learning and the Adult Learner," Adult Leadership, XIV (February, 1966), p. 254 ff.
39. Hurlbut, Edward V. "Adult Teachers are Counselors," Adult Leadership, X (March, 1962), pp. 263-264.

40. Jensen, Gale, Liveright, A.A., and Hallenbeck, Wilbur (ed.). Adult Education - Outlines of an Emerging Field of University Study. Washington, D.C.: Adult Education Association, 1964.
41. Johnston, Joseph A. and Walz, Garry R. "Approaching Counselor Role Through Q-Sort Method," School Counselor, XV (September, 1967), pp. 39-44.
42. Kerlinger, Fred N. "Attitudes Structure of the Individual - a Q-sort of Educational Attitudes of Professors and Laymen," Genetic Psychology Monographs, LIII (1956), pp. 283-329.
43. Kerlinger, Fred N. Foundations of Behavioral Research. New York: Holt, Rinehart and Winston, Inc., 1964.
44. Kidd, J.R. How Adults Learn. New York: Association Press, 1959.
45. Klein, Paul E. and Moffitt, Ruth E. Counseling Techniques in Adult Education. New York: McGraw Hill, 1946.
46. Kolstoe, Ralph H. Introduction to Statistics for the Behavioral Sciences. Homewood, Illinois: The Dorsey Press, 1969.
47. Kreitlow, Burton W. "Needed Research," Review of Educational Research, XXXV (June, 1965), pp. 240-245.
48. Kuhlen, Raymond G. (ed.). Psychological Backgrounds of Adult Education. Chicago: Center for the Study of Liberal Education for Adults, 1963.
49. Lichtenstein, H. and Block, J.R. "The 'Middle-Aged' Cooled in Evening Colleges," Adult Education, XIII (Summer, 1963), pp. 234-239.
50. Little, L.C. (ed.). A Bibliography of Doctoral Dissertations on Adults and Adult Education. Pittsburgh: University of Pittsburgh Press, 1963.
51. Living and Learning. The Report of the Provincial Committee on Aims and Objectives of Education in the Schools of Ontario. Toronto, Canada: Newton Publishing Company, 1968. (Popularly called the Hall-Dennis Report).
52. Lorge, Irving. "Adult Learning," Adult Learning. Edited by Coolie Verner and Thurman White. Washington: Adult Education Association, 1965.
53. Lorge, Irving. "The Adult Learner," Psychology of Adults. Edited by Wilbur C. Hallenbeck. Washington: Adult Education Association, 1963.

54. Maslow, A.H. Motivation and Personality. New York: Harper and Brothers, 1954.
55. Maslow, A.H. Self-Actualization and Beyond. New England Board of Higher Education, Winchester, Massachusetts: Center for the Study of Liberal Education for Adults, 1965.
56. Mathewson, Robert H. Guidance Policy and Practice. New York: Harper, 1962.
57. McClusky, Howard Y. "Courses of the Adult Life Span." Psychology of Adults. Edited by Wilbur C. Hallenbeck. Washington, D.C.: Adult Education Association, 1963.
58. Meyer, Peter. "Counseling the Adult College Student," Adult Leadership, XI (April, 1963), p. 291 ff.
59. Miller, D.C. and Form, W.H. Industrial Sociology. New York: Harper, 1951.
60. Miller, Harry L. Teaching and Learning in Adult Education. New York: Macmillan, 1964.
61. Mitzel, M. Adele. "The Functional Reading Word List for Adults," Adult Education, XVI (Winter, 1966), pp. 67-69.
62. National Association of Public School Adult Education. Counseling and Interviewing Adult Students. Washington: National Association of Public School Adult Education, 1960.
63. Neugarten, Bernice L. "Personality Changes During the Adult Years." Psychological Backgrounds of Adult Education. Chicago: Center for the Study of Liberal Education for Adults, 1963.
64. Neylan, Margaret S. "The Development of an Evaluation Q-Sort: A Study of Nursing Instructors." Unpublished Master's thesis, University of British Columbia, 1966.
65. Novack, B.J. and Weiant, G.E. "Why Do Evening School Students Drop Out?" Adult Education, XI (Spring, 1960), pp. 35-41.
66. Peterson, Elwood R. and Robinson, Phileon B., Jr. "Adult Counseling Clinic - A Cooperative Community Project," Adult Leadership, XVII (November, 1968), pp. 216, 256.
67. Pine, Gerald J. and Horne, Peter J. "Principles and Conditions for Learning in Adult Education," Adult Leadership, XVIII (October, 1969), p. 108 ff.

68. Pineo, Peter C. and Porter, John. "Occupational Prestige in Canada," The Canadian Review of Sociology and Anthropology, IV (February, 1967), pp. 24-40.
69. Plummer, Robert H. "An Experiment in Counseling," Adult Education, IX (Autumn, 1958), pp. 31-35.
70. Presgraves, James S. "A Survey of Public School Adult Guidance in Fifty Cities." Unpublished Master's thesis, Richmond University, Virginia, 1964.
71. Prosser, Charles A. and Quigley, Thomas H. Vocational Education in a Democracy. Chicago: American Technical Society, 1963.
72. Rippee, Billy D. et al. "The Influence of Counseling on the Perception of the Counselor Role," Personnel and Guidance Journal, XLIII (March, 1965), pp. 696-701.
73. Roeber, Edward C. The School Counselor. Washington, D.C.: Center for Applied Research in Education, Inc., 1963.
74. Roeber, Edward C. et al. A Strategy for Guidance: A Point of View and Its Implications. London: Collier-Macmillan Limited, 1969.
75. Ryska, John W. A Survey of Evening College Services in California Junior Colleges. Fresno City College, California, January, 1968. 15 p.
76. Schmidt, L.E. "Concepts of the Role of Secondary School Counselors." Unpublished doctoral dissertation, University of Missouri, 1959.
77. Schultz, Merlin W. "Student Opinions of a High School Guidance Program," Personnel and Guidance Journal, XLI (April, 1963), pp. 709-715.
78. Sheldon, Henry D. "America's Adults in the 'Sixties: The Demographic Picture." Sociological Backgrounds of Adult Education. Chicago: Center for the Study of Liberal Education for Adults, 1964.
79. Shertzer, Bruce and Stone, Shelley C. "The School Counselor and His Publics: A Problem in Role Definition," Personnel and Guidance Journal, XLI (April, 1963), pp. 687-693.
80. Shumake, G. Franklin and Oelke, Merritt C. "Counselor Function Inventory," School Counselor, XV (November, 1967), pp. 130-133.
81. Siegel, Sidney. Nonparametric Statistics for the Behavioral Sciences. New York: McGraw-Hill Book Company, Inc., 1956.

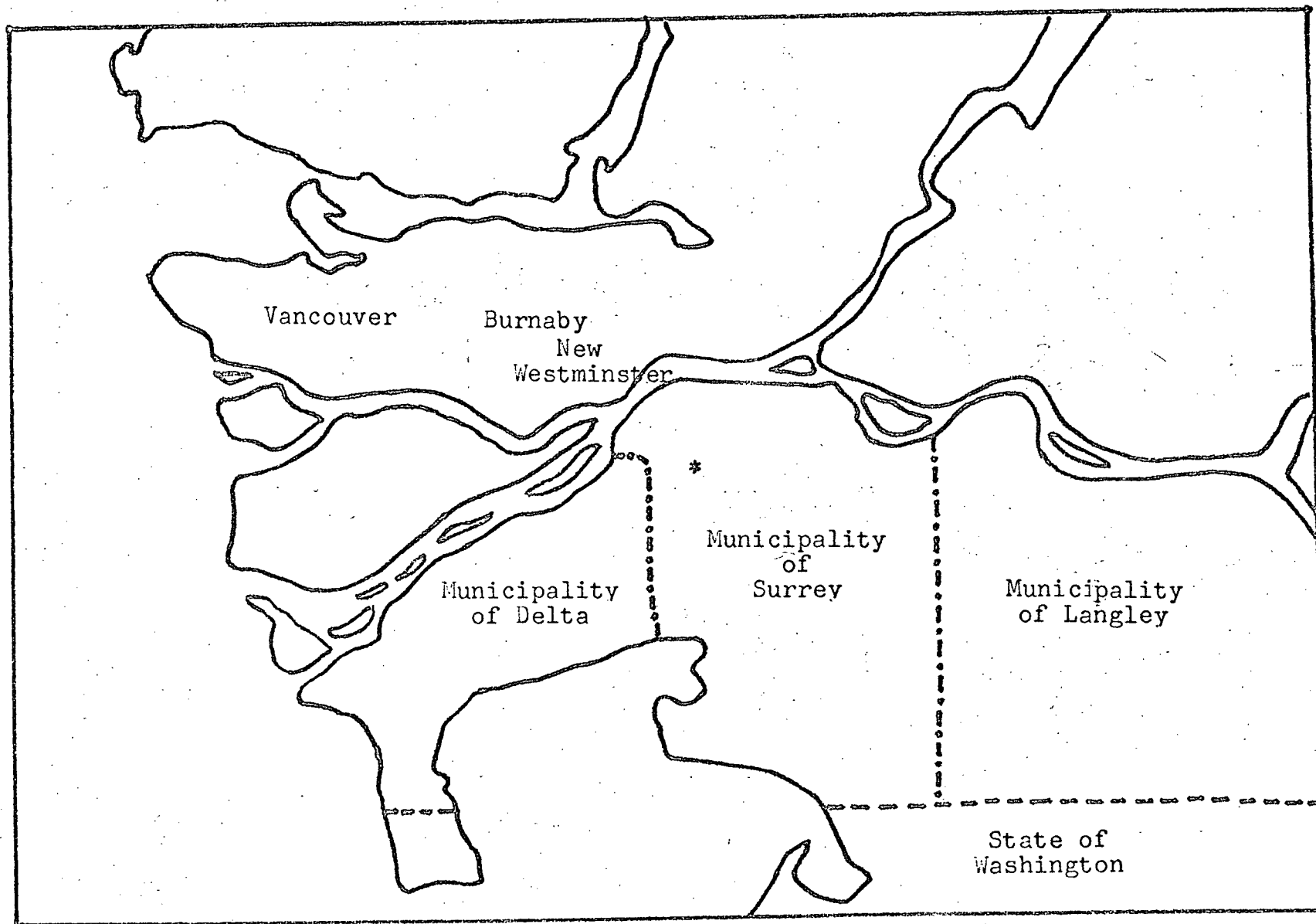


82. Smith, Margaret Ruth (ed.). Guidance-Personnel Work: Future Tense. New York: Teachers College Press, Columbia University, 1966.
83. Stephenson, William. The Study of Behavior: Q-Technique and Its Methodology. Chicago: University of Chicago Press, 1953.
84. Stern, Milton R. People, Programs, and Persuasion. Boston: Center for the Study of Liberal Education for Adults, 1961.
85. Stewart, Robert Miller. "An Evaluation of the Guidance Program in the Los Angeles City Adult Schools." Unpublished doctoral dissertation, California University, Los Angeles, 1967.
86. Stone, Walter L. "Counseling and Education," Adult Leadership, XII (April, 1964), p. 317.
87. Super, Donald E. The Psychology of Careers. New York: Harper and Row, 1957.
88. Swann, Margaret H. "The Changing Role of the School Counselor," School Counsellor, XI (December, 1963), pp. 94-101.
89. Thatcher, John H. (ed.). Public School Adult Education - A Guide for Administrators. Washington, D.C.: National Association of Public School Adult Education, 1963.
90. Thompson, Clarence H. (ed.). Counseling the Adult Student. Report of Commission XIII on Student Personnel Work for Adults in Higher Education. Washington, D.C.: American College Personnel Association, April, 1967.
91. Thompson, Clarence H. (ed.). Proceedings for a Pre-convention Workshop on College Personnel Services for the Adult: Student Assistance, Involvement, Development. Washington, D.C.: American College Personnel Association, May, 1968.
92. Thoroman, E. C. The Vocational Counseling of Adults and Young Adults. Boston: Houghton Mifflin Company, 1968.
93. Turabian, Kate L. A Manual for Writers of Term Papers, Theses, and Dissertations. (Third Edition Revised) Chicago: The University of Chicago Press, 1969.
94. Tyler, Leona E. The Work of the Counselor. Third edition. New York: Appleton-Century Crafts, 1969.

95. Verner, Coolie and Booth, Alan. Adult Education, New York: The Center for Applied Research in Education, Inc., 1964.
96. Vontress, C.E. and Thomas, H.A. "Counseling Adults," Adult Leadership, XVII (December, 1968), pp. 279-280.
97. Warman, R.E. "Differential Perceptions of the Counseling Role," Journal of Counseling Psychology, 1960, 7, pp. 269-274.
98. Weidner, Madison E. "Continuing Education Requires Continuing Guidance," Adult Leadership, XV (May, 1966), p. 5 ff.
99. Westervelt, Esther M. "Counseling Adults in Continuing Education." Guidance-Personnel Work: Future Tense. Edited by Margaret Ruth Smith. New York: Teachers College Press, Columbia University, 1966.
100. Whiteley, John M. "Counselor Education," Review of Educational Research, XXXIX (April, 1969), pp. 173-187.
101. Williams, Helen E. "Development of a Counseling Program in a School of Adult Education," Adult Education, X (Autumn, 1959), pp. 12-21.
102. Williamson, E.G. Vocational Counseling: Some Historical Philosophical, and Theoretical Perspectives. New York: McGraw-Hill, 1965.
103. Wrenn, C. Gilbert. The Counselor in a Changing World. Washington, D.C.: American Personnel and Guidance Association, 1962.
104. Zahn, Jane C. "Differences Between Adults and Youth Affecting Learning," Adult Education, XVII (Winter, 1967), pp. 67-77.

## APPENDIX A

MUNICIPALITY OF SURREY



\*Queen Elizabeth Senior Secondary School

Dear Sir or Madam,

As an adult student you are part of an increasingly important area of education. From various walks of life and for almost as many reasons, you and other adults are continuing at or resuming some form of study.

In recent years educators have begun to direct to Adult Education some of the time and attention which has formerly been given to Elementary, Secondary, and Higher Education. In realizing the extent to which the adult student differs from the pre-adult, universities (the University of British Columbia being the first in Canada) have established Departments of Adult Education in order to educate men and women to guide the various programs for adults. This requires research to help adult educators learn what the adult himself feels he needs.

As a graduate student in the Department of Adult Education at U.B.C., I would like your help in exploring one important area - the counselling of adult students. A study concerning this is proposed for early in December at your school and on an evening when you attend a class. The total time involved should not exceed forty-five minutes.

If you are willing to participate in this study, which has the full support of the Surrey School District, Adult Education Division, will you complete the attached sheet and return it to your subject teacher at this time.

Yours sincerely,

Edwin W. Johnson,  
Department of Adult Education,  
U.B.C.

# CONSENT TO PARTICIPATE IN A STUDY OF ADULT COUNSELLING

NAME (Please print)      Mr. \_\_\_\_\_  
                                  Mrs. \_\_\_\_\_  
                                  Miss \_\_\_\_\_

ADDRESS \_\_\_\_\_

TELEPHONE \_\_\_\_\_

AGE (Please circle the appropriate range)

under 21	46 - 50
21 - 25	51 - 55
26 - 30	56 - 60
31 - 35	61 - 65
36 - 40	over 65
41 - 45	

OCCUPATION \_\_\_\_\_

COURSE(S) WHICH YOU ARE CURRENTLY TAKING \_\_\_\_\_

\_\_\_\_\_

EVENING(S) WHEN YOU ATTEND \_\_\_\_\_

Dear

I have been very gratified with the interest in adult counselling which you and others have shown by your consent to participate in the study which I shall be conducting. In all, there will be approximately one hundred and thirty adults involved.

As I indicated when I previously met you, it is my intention to conduct this study during the first two weeks of December. Although I shall be there each evening from 8:00 p.m. on, I expect that you will be free at the end of your regular class. In order to avoid an unwieldy number on any one night, I have circled below a night which, I hope, will be satisfactory for you.

Monday, December 1

Monday, December 8

Tuesday, December 2

Tuesday, December 9

Wednesday, December 3

Wednesday, December 10

Thursday, December 4

Thursday, December 11

The place will be Room 308 at Queen Elizabeth School. If the time which I have suggested is not convenient, will you drop by this room to tell me. We can then arrange a night which is suitable.

Thank you once again for your willingness to assist me.

Yours truly,

P.S. It may be helpful to put this letter with your notes where it will serve as a reminder.

## APPENDIX B



## Q-SORT ITEMS ARRANGED BY CATEGORIES

A. Educational Counselling Functions

1. to help me think out my educational needs and the course(s) most likely to satisfy those needs
2. to help me transfer from one course to another in the school
3. to discuss with me any courses in which I am having difficulty
4. to assist me in planning toward long-range educational goals
5. to inform me about the school (for example, its rules, regulations, organization, services, etc.)
6. to know registration procedure and to help me register
7. to help me know my strengths and limitations
8. to give me tests to help me understand my interests and abilities and to discuss the results with me
9. to help me learn good study methods
10. to help me to set realistic goals for myself
12. to explain the requirements for entering and completing various programs of study
13. to inform me about other educational agencies if they offer courses more likely to satisfy my needs
14. to hold early registration and information sessions
15. to discuss how I can use my background and experiences to help me in my education
16. to provide information about colleges, universities, and other institutions
17. to provide information about scholarships, bursaries, or loans
18. to suggest appropriate remedial work or tutoring if I seem to need it
19. to discuss problems I have in learning and ways I can help myself

21. to talk over possible solutions if the lack of finances is preventing me from getting the education I want
22. to explain requirements for entering or transferring to other educational institutions
23. to discuss with me the types of education I may need at different stages of my life
27. to know and be able to explain the courses available.
29. to explain terms which are unfamiliar to me, such as credit, unit, semester, prerequisite, etc.

#### B. Occupational Counselling Functions

30. to provide letters of reference
31. to have a good supply of printed material describing different occupations and their requirements
32. to help me learn how to look into different occupations
33. to arrange for me to talk with people employed in occupations that interest me
34. to know where to direct me for occupational information not available in the school
35. to tell me about occupations that are growing and those that are fading out

#### C. Personal Counselling Functions

11. to know enough about me to help me with my present decisions
36. to help me understand myself better
38. to direct me to other agencies or professional persons who can help me with personal problems
39. to give me the opportunity to talk about my problems and difficulties
41. to help me express myself without putting words in my mouth
42. to help me learn how I can take part in a class without making a fool of myself

43. to help make arrangements for those who wish to discuss common interests or concerns

D. Counsellor-Adult Relationship Functions

20. to check with me occasionally to see how I am progressing
24. to know the ways in which adult students differ from pre-adult students
25. to give only advice or information about which he is certain
26. to make certain that he and his services are known to me
28. to pass on to teachers and administrators any suggestions which I have made
37. to refer problems beyond his experience to those better qualified to help me
40. to keep in confidence what we say to one another
44. to make me feel welcome and accepted
45. to treat me as an adult
46. to give me support and encouragement
47. to provide a private and relatively quiet place to meet with me
48. to make his advice and information practical
49. to be approachable and available when I need help
50. to recognize that it is my responsibility to make my own decisions

## APPENDIX C

## GENERAL INFORMATION

The purpose of this study is to find out how you view the importance of the functions of an adult education counsellor.

The Q-sort method is being used to obtain this information because it provides you with a good means of ranking the functions from those which you consider of high importance to those which you consider of low importance.

There are no right or wrong answers. You will be indicating how you personally feel. DO NOT worry about how anyone else is answering or about how you think people expect you to answer. It is how you feel that is important.

You have been given an envelope containing:

- 1) a sheet headed Data Sheet
- 2) 50 cards with a printed statement on each one
- 3) 9 yellow cards numbered 1 to 9
- 4) an instruction sheet

Please take the instruction sheet at this time. You will find it most helpful to follow this step by step. If you have any questions, please ask me.

## INSTRUCTION SHEET

1. Complete Part A of the Data Sheet - the part headed Personal Data.
2. When you have completed Part A, place the sheet to one side and take the yellow cards numbered 1 to 9 and the 50 cards containing the printed statements.
3. Procedure for the Q-Sort.

STEP 1: Place the yellow cards across the top of your table:

1    2    3    4    5    6    7    8    9

STEP 2: Now take the 50 cards with statements. (Please note that the numbers on these cards have no bearing on the way in which you arrange them.)

1. Sort these cards into three roughly equal piles: one containing the cards describing functions which you consider of high importance, one of medium importance, and one of low importance.
2. Place the high pile on your left, the low pile on your right, and the medium pile in the middle.

STEP 3: Now take the high pile.

1. Select the nine most important cards and place the rest in the medium pile.
2. Take the nine cards selected above and select the three most important.
3. Place the remaining six cards on yellow card #3.
4. Take the three cards selected above and select the one most important and place it on yellow card #1.
5. Place the two remaining cards on yellow card #2.

STEP 4: Now take the low pile.

1. Select the nine least important cards and place the rest in the medium pile.
2. Take the nine cards selected above and select the three least important.
3. Place the remaining six cards on yellow card #7.

4. Take the three cards selected above and select the one least important and place it on yellow card #9.
5. Place the two remaining cards on yellow card #8.

STEP 5: Now take the medium pile - the remaining thirty-two cards.

1. Sort these cards into three piles - ten of slightly greater than medium importance, twelve of medium importance, and ten of slightly less than medium importance.
2. Place the ten slightly greater than medium cards on yellow card #4.
3. Place the twelve medium cards on yellow card #5.
4. Place the ten slightly less than medium cards on yellow card #6.

RESULT:	Number of Piles	1	2	3	4	5	6	7	8	9
	Number of Cards	1	2	6	10	12	10	6	2	1

4. Now that you have completed the procedure for the study, once again take the sheet headed Data Sheet and complete Part B headed Raw Data as follows:

STEP 1: Take the card from pile 1 and enter the number on the card in column #1 on the Raw Data sheet; take the cards from pile 2 and enter the numbers on each card in the spaces provided in column #2 on the Raw Data sheet; continue this procedure until all the cards are entered on the Raw Data sheet.

STEP 2: Place the Data Sheet and all the cards in the envelope, seal the envelope, and return it to me.

Thank you very much for your co-operation.

Edwin W. Johnson

## DATA SHEET

PART A: PERSONAL DATA

Age: .....

Sex: .....

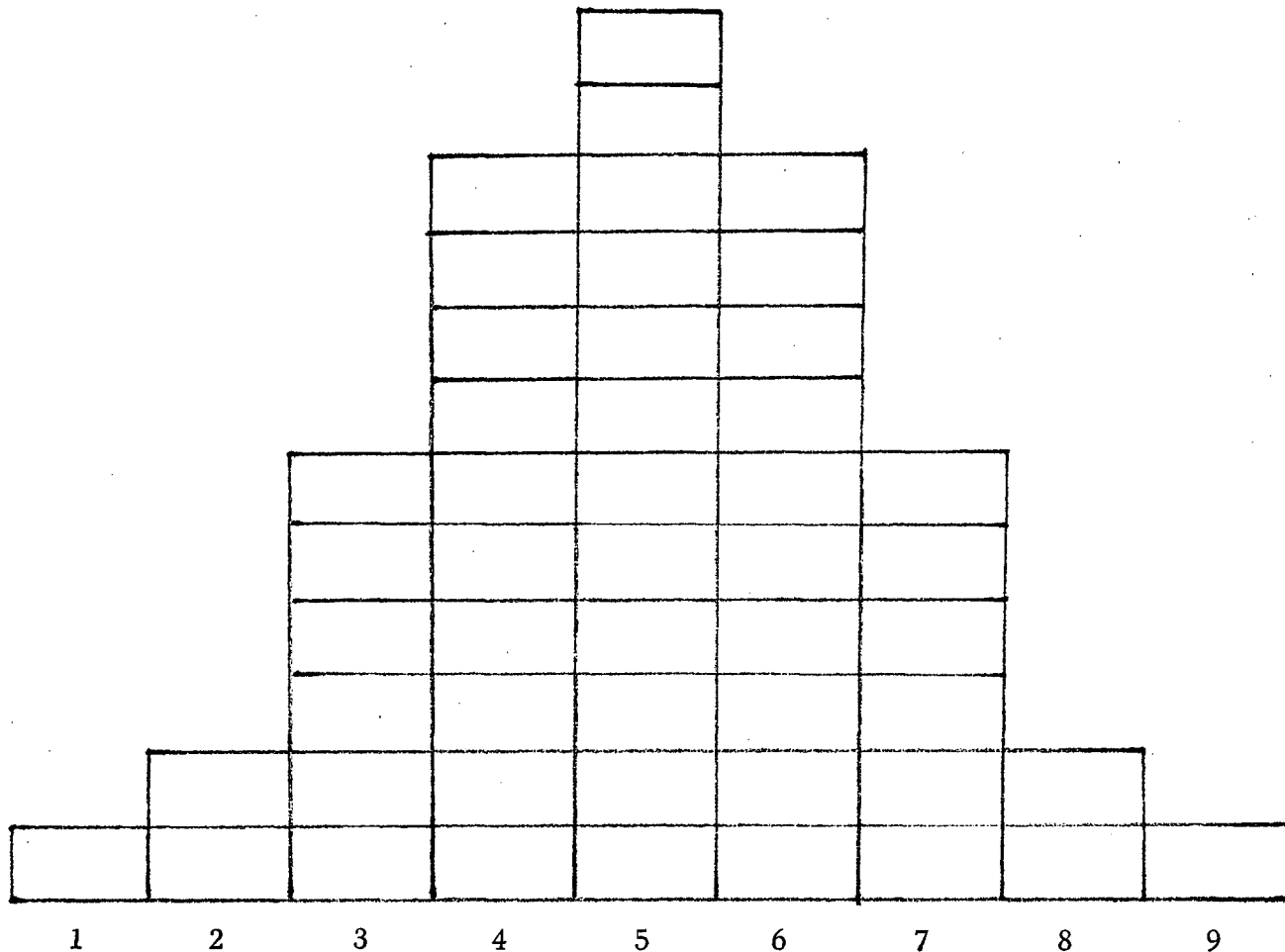
Occupation: .....

Years of School Completed .....

Did you receive counselling

1) when you attended elementary school? Yes .... No ....

2) when you attended secondary school? Yes .... No ....

PART B: RAW DATA



**APPENDIX D**

# KRUSKAL-WALLIS ONE-WAY ANALYSIS OF VARIANCE

## Formula

$$H = \frac{12}{N(N+1)} \sum_{j=1}^k \frac{R_j^2}{N_j} - 3(N+1)$$

where  $k$  = number of samples

$N_j$  = number of cases in  $j^{\text{th}}$  sample

$N$  =  $\sum N_j$  the number of cases in all samples combined

$R_j$  = sum of ranks in  $j^{\text{th}}$  sample (column)

$\sum_{j=1}^k$  directs one to sum over the  $k$  samples (columns)

## Calculation for Total Population

$$\begin{aligned} H &= \frac{12}{N(N+1)} \sum_{j=1}^k \frac{R_j^2}{n_j} - 3(N+1) \\ &= \frac{12}{50(50+1)} \left[ \frac{(416)^2}{23} + \frac{(153)^2}{6} + \frac{(270)^2}{7} + \frac{(436)^2}{14} \right] - 3(50+1) \\ &= .0047 (7524.17 + 3901.5 + 10414.29 + 13578.29) - 153 \\ &= .134657 \end{aligned}$$

$$\text{d.f.} = k - 1 = 3$$

$$p < .01$$

## MULTIPLE COMPARISONS USING RANK SUMS (DUNN)

### Formula

Let  $\hat{\psi}_p$  denote a particular linear contrast between two means or sets of means. Then a test for the difference among means is given by

$$T = \frac{\hat{\psi}_p - E[\hat{\psi}_p]}{\sqrt{\text{Var } \hat{\psi}_p}} \quad \text{approx.} \quad N(0, 1^2)$$

Where:  $\hat{\psi}_p$  is the linear contrast of interest.  $E[\hat{\psi}_p]$  is the expected value of that contrast which is zero under  $H_0$

$$\text{Var } \hat{\psi}_p = \frac{[N(N+1) - \sum_{j=1}^k (t^3 - t)]}{12(N-1)} \times \left[ \frac{1}{\sum n_j} + \frac{1}{\sum n_j^2} \right]$$

Where:  $N$  is the total sample size

$t$  denotes the number of ties at specific ranks

$n_j$  designates the sample size of the first element of the linear contrast

$n_j^2$  designates the sample size of the second element of the linear contrast

The resulting  $T$  is approximately equal to the standard normal deviate. The probability associated with  $T$  can then be derived from the standard normal deviate table.

### Calculation for Total Population

Matrix B (Educational counselling vs. Counsellor-adult relationship)

$$\begin{aligned} \hat{\psi}_p &= 18.0869 - 31.1428 = -13.0559 \\ \text{Var } \hat{\psi}_p &= \frac{[N(N+1) - \sum (t^3 - t)]}{12(N-1)} \times \left[ \frac{1}{\sum n_j} + \frac{1}{\sum n_j^2} \right] \\ &= \frac{[50(51) - (2^3 - 2)]}{12(49)} \times \left[ \frac{1}{23} + \frac{1}{14} \right] \end{aligned}$$

$$\begin{aligned}
 &= (212.5 - .0102) \times (.0434 + .0714) \\
 &= 212.4898 \times .1148 \\
 &= 24.3938
 \end{aligned}$$

$$\begin{aligned}
 T &= \frac{\hat{\psi}_p - E[\hat{\psi}_p]}{\sqrt{\text{Var} \hat{\psi}_p}} \\
 &= \frac{-13.0559 - 0}{\sqrt{24.3938}} \\
 &= \frac{-13.0559}{4.939} = -2.6434
 \end{aligned}$$

A T of 2.6434 allows the rejection of the null hypothesis at  $\alpha = .0041$

# WILCOXON MATCHED-PAIRS SIGNED-RANKS TEST (SMALL GROUP)

Calculation for Unemployed Female Group and Employed Female Group Regarding  
the Counsellor • Adult Relationship

Pair (Item)	Mean Scores for unemployed female group	Mean Scores for employed female group	d	Rank of d	Rank with less frequent sign
20	4.68	4.40	.28	6	
24	4.44	4.24	.20	5	
25	5.88	4.92	.96	1	1
26	5.32	4.92	.40	7.5	
28	4.16	3.64	.52	11	
37	5.96	5.56	.40	7.5	
40	4.68	4.04	.64	12	
44	3.60	3.72	-.12	3	3
45	3.76	4.24	-.48	10	10
46	4.56	4.40	.16	4	
47	4.16	4.08	.08	2	
48	5.80	5.08	.72	13	
49	6.20	5.12	1.08	14	
50	4.96	4.52	.44	9	

T = 14

For N = 14 a T of 14 allows the rejection of the null hypothesis at  $\alpha = < .02$  for a two-tailed test.

## THE NINE MOST IMPORTANT

Number of Item	Item	Category
1	•to help me think out my educational needs and the course(s) most likely to satisfy those needs;	Educational
27	•to know and be able to explain the courses available;	Educational
12	•to explain the requirements for entering and completing various programs of study;	Educational
8	•to give me tests to help me understand my interests and ability to discuss the results with me;	Educational
4	•to assist me in planning toward long-range educational goals;	Educational
13	•to inform me about other educational agencies if they offer courses more likely to satisfy my needs;	Educational
19	•to discuss problems I have in learning and ways I can help myself;	Educational
15	•to discuss how I can use my background and experiences to help me in my education;	Educational
48	•to make his advice and information practical;	Counsellor Adult Relationship
49	•to be approachable and available when I need help;	Counsellor Adult Relationship
3	•to discuss with me any courses in which I am having difficulty;	Educational
37	•to refer problems beyond his experience to those better qualified to help me;	Counsellor Adult Relationship
16	•to provide information about colleges, universities, and other institutions;	Educational
10	•to help me set realistic goals for myself;	Educational
22	•to explain requirements for entering or transferring to other educational institutions;	Educational
34	•to know where to direct me for occupational information not available in the school;	Occupational
25	•to give only advice or information about which he is certain;	Counsellor Adult Relationship
35	•to tell me about occupations that are growing and those that are fading out	Occupational

## ITEMS BY SUB-GROUPS

(Rank of Item Indicated)														
	Males	Females	Males 30	Males 30+	Females 30	Females 30+	Some Previous Counselling	No Previous Counselling	Grade 10 or less	Grade 11 or more	Males Occupation I	Males Occupation II	Employed Females	Unemployed Females
1	1	1	1	4	1	2	1	2	1	1	1	3	2	1
2	2	2	2	3	8	1	3	1	3	3	7	1	5	2
4	3	3	3	8	4	3	2	6	6	4	8	2	4	4
5	4	4	4	9	2	4	4	4	5	2	5	6	1	
3	5	5	5	2	7	6	5	3		5	2	5		3
8	6	9	9		6	8	6	8		6	4		3	
9*	7		6	3			9	7	2		9			7
7		8	7		9*			9*	7	9*		4		
6			1					5	9	9*	3	8		
9*	6				9*	7	4				7			5
9				5				9*		8			6	
8		5		7					8					8
		7		9			8			7		9*	9*	
						5					6		9*	6
													7	
														9
														8

\* indicates ties

## THE NINE LEAST IMPORTANT

Number of Item	Item	Category
42	to help me learn how I can take part in class without making a fool of myself;	Personal
44	to make me feel welcome and accepted;	Counsellor• Adult Relationship
43	to help make arrangements for those who wish to discuss common interests or concerns;	Personal
28	to pass on to teachers and administrators any suggestions which I have made;	Counsellor• Adult Relationship
45	to treat me as an adult;	Counsellor• Adult Relationship
5	to inform me about the school (for example, its rules, regulations, organization, service, etc.)	Educational
30	to provide letters of reference;	Occupational
41	to help me express myself without putting words in my mouth;	Personal
36	to help me understand myself better;	Personal
47	to provide a private and relatively quiet place to meet with me;	Counsellor• Adult Relationship
24	to know the ways in which adult students differ from pre-adult students;	Counsellor• Adult Relationship
46	to give me support and encouragement;	Counsellor• Adult Relationship
40	to keep in confidence what we say to one another;	Counsellor• Adult Relationship
38	to direct me to other agencies or professional persons who can help me with personal problems	Personal



## ITEMS BY SUB-GROUPS

(Rank of Item Indicated)															
	Males	Females	Males 30	Males 30+	Females 30	Females 30+	Some Previous Counselling	No previous Counselling	Grade 10 or less	Grade 11 or more	Males Occupation I	Males Occupation II	Employed Females	Unemployed Females	
1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	
2	2	2	2	5	6	2	2	2	2	2	3	5	4	2	
6	3	7	8	4	4	5	4	3	7	3	7	7	2	5	
4	4	5	4	2	8	3	6	4	4	9*	3	3	3	9	
5	8	6	6	9*	4	6	5	5	6	5	6	9*	4	4	
7	5	4		3	7	5	9	9	9	5	2		5	6	
3		3	7			9*	4	6	9	8	2				
8	7		2	7	6	8	8	8	8		4	6	7	7	
6	9*		8	3	9*	7	3				8	9*	3		
9	8		5		7		7		7	6			8	8	
	9*		9*							9*	9*	9*			
9		3								4					
		9									9*	7			

\* indicates ties