AN INVESTIGATION OF THE MEANING OF WORK TO HIGH-SCHOOL STUDENTS IN PRE-VOCATIONAL, INDUSTRIAL ARTS, HOME ECONOMICS AND ACADEMIC PROGRAMS IN SELECTED NEWFOUNDLAND SCHOOLS

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AN INVESTIGATION OF THE MEANING OF WORK TO HIGH-SCHOOL STUDENTS IN PRE-VOCATIONAL, INDUSTRIAL ARTS, HOME ECONOMICS AND ACADEMIC PROGRAMS IN SELECTED NEWFOUNDLAND SCHOOLS

by

© Neville Webb, B.Voc.Ed.

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of the requirements for the degree of
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ABSTRACT

Purpose of the Study

The purposes of this study were: (1) to determine the extent to which pre-vocational programs provided high school students with perceptions of the meaning of work and (2) to investigate variations in the meaning of work according to the variables of sex, grade level, and exposure to either a pre-vocational or an industrial arts - home economics, or an academic curriculum environment.

Procedure

Pre-vocational data were drawn from a total of 280 subjects enrolled in the grades nine through eleven levels in Holy Spirit School, Manuels, Queen Elizabeth Regional High School, Foxtrap and Laval High School, Placentia. These subjects attended pre-vocational programs at either district vocational school Conception Bay South or Placentia.

Grade eight baseline data were provided by 131 subjects drawn from Holy Spirit School, Manuels, Foxtrap Junior High School, St. Peter's Elementary School, Jerseyside and Most Holy Rosary Elementary School, Freshwater.

Comparative industrial arts - home economics populations comprised 218 subjects drawn from grade eight through eleven in Partanna Academy - John Burke Regional High School, Grand Bank and Central High School, Marystown.

Control academic populations comprised 140 subjects drawn from grades nine through eleven in Central High School, Mount Carmel and Enright Memorial School, Salmonier.

The Neff Work Sort (NWS) was administered to all subjects. The Q-sort comprised sixty statements about work. Each subject was required to sort a set of sixty statement cards in a forced choice distribution, (scale 1-9), from most characteristic to least characteristic. Test re-test reliability of the NWS was determined as 0.86.

Kendall's coefficient of concordance, Kendall's tau and the Pearson correlation coefficient were used to determine the measures of agreement between the rankings of the NWS items and average cell scores. Tests on the null hypotheses were made at the 0.05 level of significance.

Results and Conclusions

Results of the study indicated that no significant difference existed between samples on the meanings attached to work according to NWS items on the variables of sex, grade level and curriculum environment.

Descriptive data showed that work was most characteristically perceived in terms of satisfaction with an almost equal focus on "self" and "others", associated with the needs of self-esteem, esteem for others and creativity.

Within the limitations of this study it was concluded that: 1. A common perception of work was held by males and females. 2. Perceptions about work appear to be formed early in life and may remain constant over the grade levels examined. 3. Adolescents may perceive work in idealistic terms. 4. Whatever advantages may accrue to students as a

consequence of exposure to the pre-vocational curriculum environment these advantages were not differentiated by the NWS.

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CHAPTER I

THE NATURE OF THE STUDY

I. Introduction

If we accept that one of the tasks of the school is to expose the child to a variety of planned experiences through instruction that will hopefully provide cues and experiences to ease the transition from school to work, then the structure and content of the school curriculum must be designed for this purpose. As Rose (1971) stated "next to the family the most important agent of orientation and vocationalization is the school" (p. 3).

Warren (1973) in reviewing the curriculum offerings in Newfoundland schools up to that time, noted that the traditional high school curriculum was highly academic in orientation and designed to prepare students for further academic training. A study of grade eleven students in Newfoundland schools by Brenton (1967) reported that 33.7 percent of males and 19.7 percent of females did not express a (clear) preference for any type of work or occupation upon leaving school. Further this study reported that 34.7 percent of the males and 27.0 percent of the females in the study did not know what type of work they expected to have as a career.

These data would seem to suggest the traditional academic curriculum found in Newfoundland schools up to the

early 1970's was not providing students with the means of orienting themselves to the problem of making a successful transition from school to the world of work. As Tolbert (1974) said,

> The choice of work is one of the most important decisions one makes. It determines, to a large extent, how time will be spent, who will be chosen as friends, what attitudes and values will be adopted, where one will reside and what pattern of family living will be adopted (p. 1).

Record (1973) in his review of the historical background of the Pre-Vocational Pilot-Project at District Vocational School Conception Bay South, noted the concern expressed by the representatives of the Roman Catholic School Board for Conception Bay Center and the Integrated School Board for Conception Bay South, over the high drop-out rate of high school students. As a consequence of their representations to the Provincial Government, the first pre-vocational program for high school students was established at Conception Bay South District Vocational School (D.V.S. Seal Cove) in September 1972.

A Planning Committee report on the Seal Cove Pilot-Project (1973) gave the objectives of the pre-vocational program as being:

1. to provide for students experience with basic skills used in industry
2. to give pupils occupational information and insight into their own abilities so that they

will be able to make a wise career choice as their future careers

3. to give greater relevance to the academic content of the curriculum
4. to improve the retention rate in the high schools.

The pre-vocational program therefore allowed students with a variety of abilities and interests to explore a diversified curriculum at the grade nine, ten and eleven levels, before proceeding to university or technical college or trade school or directly entering the work force.

The nature of this study was essentially exploratory, and was concerned with establishing to what extent pre-vocational programs in district vocational schools provided high school students with a perception of the meaning of work. If in fact these pre-vocational programs, because of their unique structure and content, provided students with a positive perception of the meaning of work, then the problem of making the transition from the world of school to the world of work would be eased or significantly reduced.

II. Statement of the Problem

Record (1973) in his review of literature for his study of the first year of operations of the pre-vocational pilot-project at district vocational school Conception Bay South, found many programs were being implemented in pre-vocational and career education. One purpose of these

programs was to help students adjust to today's technological changes. However, as Record noted there was little evidence to determine the effects of these programs on students.

McCarthy (1976) reported the results of a study undertaken in 1974 that compared the career knowledge of grade nine students in a rural Newfoundland high school with the career knowledge of grade nine students in the pre-vocational program at district vocational school Conception Bay South. The results of her study showed that after exposure to a six-week career guidance program, the students in the rural high school had a higher level of career knowledge than students in the pre-vocational program.

An overall conclusion from this study was that the career guidance program, seen as an alternative to the pre-vocational education program, was more effective in providing students with career knowledge.

McCarthy has suggested that the second objective of the pre-vocational program was not being accomplished. The conclusion with respect to this specific objective was partially supported by earlier data reported by Record (1973). Record noted at that time that students could only list the most obvious jobs related to each pre-vocational elective (option).

However, with respect to personal knowledge of insight into their (students) abilities "the data suggested that this section (objectives) of the pilot-project was being achieved by the majority of students" (p. 96).

Spain (1976) in examining the relationship of pre-vocational education to post-secondary opportunity stated

> (Pre-vocational) course outlines convey the impression that the focus of the pre-vocational program is on employment-related skills. Answering this question about the fundmental nature of pre-vocational education as part of a career development program leading to circumscribed areas of post-secondary opportunity or, if it leads to an expanded horizon of opportunity (p. 27, part III).

Thus, Spain suggested that (a) the primary objectives of pre-vocational programs are not being accomplished and (b) the question existed as to whether pre-vocational programs either may lead students into limited and specific areas of vocational training or do these programs lead the student to wider areas of interest and opportunity either at university or in technological areas or jobs in trades and service industries. Do these programs in fact provide an orientation to the world of work because of (a) the instructional environment (b) occupational stimuli or (c) the decision making nature of the pre-vocational programs in district vocational schools?

The instructional environment of pre-vocational programs in district vocational schools mirrored the personnel tools, materials and processes used in industry. Instructional staff for these programs were qualified trades persons. In this respect Marshall (1973) noted, in comparing industrial arts and pre-vocational programs, "there is likely some (instructional) advantage however in cases where people

with trades background are involved in teaching these courses and when classes are conducted in fairly specialized shops" (p. 4).

The scale and type of equipment used by students in pre-vocational programs replicated to an extent the types of tools found in industrial or work environments; consequently, the student, by operating equipment and handling materials, may be likely to experience occupational stimuli similar in scale and nature to those experienced by industrial workers. It would seem logical to suggest that the real decision making required of the student to select electives (options) through successive grades in the pre-vocational program may allow the student to explore and define his unique vocational identity and perception of work.

As Borow (1962) said

> The formation of attitudes toward work vary in major ways depending upon one's experience in maturing. Attitudes also appear to depend on the special training and education that goes on in school .... as a person prepares to enter a field of endeavour, it becomes obvious that his experience and knowledge based on his training have given him a particular point of view .... in a sense, a particular bias in understanding the meaning of work (pp. 12-13).

Statement of Hypotheses

The following sets of hypotheses were structured to determine if the perception of the meaning of work varied as a consequence of the variables of sex, and sequential exposure of students to the different grade levels of

pre-vocational, industrial arts - home economics and academic curricula environments.

1. Hypotheses — There is no significant difference in the perceived meaning of work between:

   1:1 males and females within the same grade level of a pre-vocational curriculum environment.

   1:2 males and females within the same grade level of an industrial arts - home economics curriculum environment.

   1:3 males and females within the same grade level of an academic curriculum environment.

2. Hypotheses — There is no significant difference in the perceived meaning of work in a pre-vocational curriculum environment held by:

   2:1 males and females in different grade levels.

   2:2 males in different grade levels.

   2:3 females in different grade levels.

3. Hypotheses — There is no significant difference in the perceived meaning of work in an industrial arts - home economics curriculum environment held by:

3:1 males and females in different grade levels.

3:2 males in different grade levels.

3:3 females in different grade levels.

4. Hypotheses There is no significant difference in the perceived meaning of work in an academic curriculum environment held by:

4:1 males and females in different grade levels.

4:2 males in different grade levels.

4:3 females in different grade levels.

5. Hypotheses There is no difference in the perceived meaning of work held by:

5:1 males and females in the same grade level of pre-vocational, industrial arts - home economics and academic curricula environments.

5:2 males in the same grade level of pre-vocational, industrial arts - home economics and academic curricula environments.

5:3 females in the same grade level of pre-vocational industrial arts - home economics and academic curricula environments.

III. Purpose of the Study

The purpose of this study was to determine the extent to which pre-vocational programs provided high school students with perceptions of the meaning of work and also to investigate variations in the meaning of work according to the variables of sex, grade level and exposure to different curricula environments. The curricula environments examined by this study were:

1. pre-vocational programs in district vocational.
2. industrial arts and home economics programs in high schools.
3. academic programs in high schools.

IV. Sources of Data and Procedures

Sources of Data and Organization of the Study

The design of the study was cross sectional and longtitudinal in nature. This allowed data to be drawn from three different curricula environments. These curricula environments were (a) pre-vocational, (b) industrial arts - home economics and (c) academic programs at the high school level. Every curriculum environment was regarded by the investigator as a particular type of treatment.

The design of the study was as follows:

Grade		Curriculum Environment	
R_8	Baseline data	0	No vocational exposure
R_8		X_0	Industrial arts - home economics
R_9, 10, 11		X_1	Pre-vocational
R_9, 10, 11		X_2	Industrial arts - home economics
R_9, 10, 11		0	Academic

A longitudinal emphasis was introduced into the study by gathering data from students in the eighth, ninth, tenth and eleventh grades. The longitudinal aspect of this study was thought to be important by the investigator because of (a) the difference in the structure of the pre-vocational program in the ninth, tenth and eleventh grades in terms of the number of electives a student is allowed to select and (b) to determine if the meaning of work is a constant or otherwise in the high school grades.

Data concerning the meaning of work were sought from two sources at the grade eight level. Grade eight level data were to serve as a reference baseline for the study.

One source of grade eight data was provided by students who had not been exposed to any type of vocationally oriented programs in school. These students would be entering a pre-vocational program at the grade nine level and beyond.

The other grade eight source of data was provided by students who had been exposed to either an industrial arts or home economics curriculum from the grade seven level. These students would be continuing in these particular curricula in their home-school in high school grades.

Definitions

1. Curriculum environment. Specified as either (a) pre-vocational program offered to high school students in a district vocational school, or (b) pre-vocational: industrial arts and home economics offered within the high school or (c) an academic high school program.
2. Pre-vocational program. A structured curriculum offered to high school students at a district vocational school. The curriculum has at least seven options. The pre-vocational program was characterized by student decision making to select options. Four options were selected at the grade nine level; two of these four options were re-selected by the student at the grade ten level. Grade eleven concluded with a single option.
3. Pre-vocational: industrial arts. A curriculum offered within the high school setting. This curriculum allowed the student to explore clusters of processes and techniques that reflect industrial society. This curriculum was offered in a multi-activity shop usually by a single instructor. Student selection of options

was not a major characteristic of such a program.

4. Home economics. A structured four-year curriculum that allowed a student to study and explore core areas of foods, nutrition, clothing and textiles, human development, the family and contemporary homes.
   Student selection of core areas was not a major characteristic of such a program.
5. Academic program. A program offered at the high school level leading to graduation at grade eleven. Such a program either (a) meets university entrance requirements or (b) provides a general matriculation standing. Exploration or decision making by the student to select electives were not major characteristics of such a program.
6. Junior high school student. A male or female enrolled in the grade eight baseline level of the study.
7. High school student. A male or female enrolled in either grade nine or grade ten or grade eleven.
8. Option. A discrete curriculum area or elective within a pre-vocational program offered in a district vocational school.
9. Exploration. An individual searching experience for the purpose of becoming oriented with the first elements of an option.
10. Decision making. A systematic process that utilizes the affective and cognitive domains whereby various data are analysed for the purpose of making a choice between two

or more alternatives.

11. Real decision. A decision(s) made solely by the student that allows him to select an option or sequence of options in a curriculum.

12. Vocational maturity. The readiness of a student to make an occupation choice from among possible career areas.

13. Work. Purposeful mental or physical activity that points beyond economic reward by stimulating creative talent and providing a source of personal fulfillment (Quey, 1968, p. 223).

Controls for Validity

Because of the nature of the design and organisation of the study it was possible to attempt the control of some of the factors that jeopardize the validity of experimental designs.

1. History. All groups in the study were tested in a period between March 2nd and April 12th, 1979. With the exception of Holy Spirit School, Manuels, every individual school was tested in a single day.

The study at Holy Spirit School, Manuels, was begun with the grade eight students on March 2nd followed by grade nine students on April 11th and by grade ten and eleven students on April 12th.

2. Testing. The instrument was administered to every group by the investigator following the procedure given in the instruction sheet.

3. Instrumentation. The instrument used to assess the meaning of work was a Q-sort developed by Neff and Helfand (1963). The instrument comprised sixty statements with reference to the meaning of work. The reading level of the statements was assessed at the grade seven level by Dr. Wolfe of Memorial University of Newfoundland. No changes were made in the instrument statements.

4. Selection Bias. Some selection bias existed because of the basis on which pre-vocational programs were selected. Pre-vocational programs were selected on the criteria of being (a) established over five years (b) offering a minimum of seven options and (c) being in similar geographic regions.

District vocational school Conception Bay South established its pre-vocational program in 1972 and offered eight options for student selection. District vocational school Placentia offered seven options and the pre-vocational program was established in 1973.

The criteria for the selection of industrial arts and home economics programs were (a) being as near to the pre-vocational programs in geographic location as possible and (b) as being typical of similar programs offered elsewhere in the province. The schools used for this aspect of the study were Marystown Central High School, John Burke High School and Partanna Academy in Grand Bank.

The criteria for the selection of academic programs were (a) being as near to the pre-vocational programs in

geographic location as possible and (b) did not at the present or in the past offer any form of vocational programs to high school students.

The schools used for this aspect of the study were Enright Memorial, Saint Joseph's and Mount Carmel High School.

5. Selection Maturation Interaction. The superintendent of every school board and principal of every school involved in the study were provided with a copy of the researcher's thesis proposal. The researcher requested that details of the study not be given except in general terms to staff members.

Students in every school were randomly selected from class lists by the researcher. Students did not know they would be involved in a study until just prior to participation.

V. Limitations

The design of this exploratory study made no attempt to control for the possible effects of such variables as intelligence, academic achievement and socio-economic background which may affect an individual's perception of the meaning of work. Each participant was selected for inclusion in the study simply by being a member of one of three curricula environments studied.

While the attempt was made to select and match samples for each curriculum environment studied according to specified criteria, differences between samples in terms of

possible biases resulting from the effects of school based guidance programs or part-time student work experience could not be taken into account.

Therefore, the foregoing limitations should be observed when interpreting the findings of this study.

VI. Significance of the Study

1. The results of this study may indicate the type of curriculum treatment best suited to remedy the problem of vocational indecision as noted by an earlier study of grade eleven students in Newfoundland schools.
2. The results of this study might be expected to suggest that the structure of curriculum is equally important as curriculum content in terms of providing the individual with a perception of the meaning of work.
3. If a curriculum that offers the student the opportunity to explore and select options does provide a positive perception of the meaning of work, then such a concept of curriculum can be used in:
   (a) employment re-habilitation programs
   (b) the avoidance of mis-employment situations, that is to say, an individual who undertakes an extended training program to discover his or her unsuitability for a specific work area.
4. This study may show that in the area of adult training it might be economical to expose potential workers to a

series of exploratory "mini-courses" before allowing the trainee worker to select his future area for long term training.

CHAPTER II

REVIEW OF RELATED LITERATURE

I. Introduction

Among the stated educational goals for pre-vocational programs, established in district vocational schools for high school students, were the objectives of giving students experience in the basic skills used in industry and providing them with occupational information. The purpose of these objectives was to help students gain an insight into their abilities and help them to make a wise occupational choice.

Research on pre-vocational education in Newfoundland has indicated that not all educational objectives related to this type of program appear to have been met. Educational alternatives such as guidance programs might also seem to meet pre-vocational objectives. Since the instructional environment of pre-vocational programs would appear to reflect aspects of the world of work, possibly special perceptions about work may accrue to pre-vocational students as a result of their being exposed to this type of educational program.

Seven questions related to the manner in which work may be perceived by students will be discussed in this chapter, namely: (1) How may work be defined? (2) What are the variations associated with the meaning of work?

(3) What factors affect the perception of work by adolescents? (4) What meanings are attached to work by adolescents? (5) How are the meanings attached to work related to school programs? (6) Is there a relationship between curriculum structure and the formation of a vocational identity? (7) Is there sex differentiation in work roles?

Since Q-methodology was used as a research technique by this study, a discussion of its principles has also been included in this chapter.

Because of the cross-sectional nature of the study across different curricula environments and the characteristics of the students in these programs, this broad exploratory approach to this thesis topic has been viewed as necessary by the investigator.

II. Definitions of Work

While the layman has been able to state the purposes of work in terms of earning a living, the term work is difuse and may be interpreted along numerous dimensions.

From studies of work in different societies Gross (1958) has generalized that work normally involves (a) authority relationships (b) division of labor and (c) is surrounded by conceptions of right or wrong. Gross has also importantly noted that work behaviour is to be understood in terms of the social system in which the individual or worker functions.

Industrial work has been interpreted by Dubin (1958) and Anderson (1964) as being a continuous activity in adult life that results in the production of goods and services and is also an activity performed for financial reward. It would seem logical to suggest that most young people grow up expecting to work at earning a living for a major part of their lives.

Russell (1958) has distinguished two forms of work

> ... first altering the position of matter at or near the earth's surface relative to such other matter; second, telling other people to do so. The first kind of work is unpleasant and ill paid; the second is pleasant and highly paid (p. 97).

Thus, some types of work would appear to be more pleasant than others; different kinds of work are also distinguished in terms of the amount of financial reward received by the worker. Other researchers, however, have viewed work as a positive and purposeful activity, around which the pattern of the worker's life may be organized (Borow and Wrenn, 1964; Henry, 1971; Tolbert, 1974; Neff, 1977).

Miller (1964) has suggested that because work may be a major activity in a person's life, it would seem that the major socializing institutions of the family, religion and school have devised and supported ways of orienting young people to become productive workers in society. This point of view would seem to imply that young people must learn work behaviours in order to effectively participate

in adult society.

Quey (1968) has conceptualized work as a purposeful mental and physical activity that deliberately points beyond the present by creating economic products to be consumed in the future. In this respect work has been perceived as a distinctly human activity. Work toward a future goal would seem to add the dimensions of needs and motivation to the concept of human work that distinguish it from similar animal activities.

While the concept of work has been given many positive attributes, Society Today (1971) has noted that "many ordinary citizens define work as an expenditure of energy they would most like to get out of" (p. 179). This particular notion would seemingly support Russell's (1958) view of work and would appear to suggest that work for some people may be a burden. Thus young people may acquire negative perceptions of work even though the institutions of school and religion have emphasized work as a positive and fulfilling life experience.

Green (1968) and Beach (1972) have postulated that work is an activity by which men express a fundmental abhorence of futility. In this respect Beach has defined work as "that activity by which men refuse to acknowledge that life is in vain" (p. 109). This definition would seemingly add the dimensions of creativity and the fulfillment of personal goals to the concept of work.

Kazanas (1973), citing the results of earlier studies of Detroit workers by Weiss and Kahn (1960), has noted that two of the ways in which these workers defined work were (a) work is an activity which must be performed even though it may not be enjoyed and (b) work is a scheduled and paid activity. Therefore, while work may offer some people the opportunity to express themselves as individuals in a meaningful way, for other people work in the form of paid labor may be an act of necessity in order to survive.

Rinehart (1975) and Neff (1977) have supported the notion that work is a totally human activity. These researchers also viewed work as an activity that results in the transformation of the world we live in. Neff has defined work in terms of four primary characteristics.

> Work is an instrumental activity carried out by human beings, the object of which is to preserve and maintain life, which is directed at a planned alteration of man's environment" (p. 99).

However, while it has been apparently possible to closely define the primary characteristics of work, human ingenuity seemingly has evolved and assigned a host of secondary meanings that have tended to obscure these primary characteristics of work. It would therefore seem reasonable to imply that people in general may not define work in terms of these primary factors, but rather in terms of secondary meanings ascribed to work by the social, cultural, religious, economic and behavioural milieu that comprises their

personal lives.

Thus, while definitions of work given in the literature lead us in different directions, taken as a whole they provide a framework within which the meaning of work as a human activity may be understood.

III. Variations in the Meaning of Work

Although the literature has indicated that work may be defined in a number of ways, people may not be too concerned with the meaning of work in their personal lives.

Anderson (1964) has stated

> Most men who work do not concern themselves with the whys and wherefores; that goes by default to the philosophers who write about work... (p. 2).

For the most part philosophical explanations of work in Western society have been incorporated into one or other religious ethics. Berger and Berger (1972) have noted that since the Reformation there has been an increasing secularization in the meaning of the concept of work. Today work has apparently been deprived of a religious (moral) significance. However, paradoxically, as Berger and Berger have importantly stated

> There is a deeply instilled notion that work <u>ought</u> to have a meaning for the identity and moral worth of the individual (p. 236).

If work in historical times may not have been regarded as the social factor it is today, its importance to the well being of society and the individual was recognized.

Neff (1977) has stated "the meanings ascribed to work cannot be derived directly from the nature of the activity, but have many complex social and cultural determinants" (p. 84). Therefore a brief review in the variation in the meaning of work referenced to philosophical interpretations would seem necessary in order to provide insight as to how the meanings of work over recorded history may still be attached and support present day cultural norms.

Meaning of Work in Classical Society

Arendt (1958) has referred to the ambiguity in the meaning of work in the writings of classical Greek society. The terms work and labor were used interchangeably. Labor in order to satisfy the needs of the body was thought to be slavish and the work of the artisan or tradesman was also assimilated to the status of labor.

Free citizens were not required to do productive work but engaged in intellectual pursuits. As Kazanas (1973) has noted, in both Greek and Roman societies, the work of the artisan was held in low esteem. In this respect Neff (1977) has pointed out that since work was the labor of the unfree, to work at all was akin to being a slave.

Even at this early time in recorded history it would appear that certain kinds of activities were held more highly than others; intellectual activity was held to be superior to manual work. It would seem reasonable to suggest that this particular notion about work may still be held by people to be true today.

Meaning of Work in Christian Society

Work from the Christian point of view was perceived as a punishment resulting from original sin. Work was thought of as a curse imposed on Man by God. Lantos (1952) stated "man wanted to know, to be like God; he (man) had eaten the forbidden fruit and had provoked the wrath of God" (p. 441). Thus, work by the individual was thought necessary to expiate original sin. As De Grazia (1964) has noted, through Adam's fall the world became a workhouse. Not to work was thought to be idle and idleness was an abhorence to Christian society.

Kazanas (1973) has pointed out that the Christian work ethic did not differentiate between mental and physical work, neither was any intrinsic value in work recognized. Paradoxically work was viewed as a curse yet at the same time perceived as the path to redemption. It would appear logical to suggest that Christian ethics have been a powerful means of transmitting work values from generation to generation.

With respect to Newfoundland, Aaron Thomas (1795) stated "a lazy, idle man is considered by the inhabitants in the same light as Bees do a drone, where everyone assists in expelling him from the hive" (p. 171). While it would be unrealistic to assume that the same attitude toward work has persisted in Newfoundland until today, the strong Christian traditions held by the people in the province make it likely that a positive orientation towards work is transmitted to

young people by the societal institutions of the church and school.

The Protestant Work Ethic

Protestantism held that work was enobling, there was just one way to serve God and that was to do perfectly the work of one's calling. Martindale (1966) has noted that following the Protestant reformation life acquired a new vocational experience. An individual's worthiness was judged by the conduct of one's practical affairs.

Wrong (1971) has suggested that the Protestant reformation was the source of modern perceptions of the meaning of work. Work was now perceived as a prime source of personal value. Neff (1977) has pointed out that at this time work acquired "good" meaning in addition to acquiring new additional subleties of meaning. As Neff (1977) stated

> While all labor was seen as "good", there were degrees of goodness. Mental work was better than unskilled work. Thus within the framework of society of the new "positive" meaning of work a hierarchy of evaluations of work reflected a status hierarchy in society (p. 87).

In the initial stages of industrialism in Europe the consequent increasing division of labor resulted in some kinds of work being held in higher esteem than other types of work. It would seem rational to imply that present day conceptions of the status of particular occupations and different kinds of work may have their origins in the

emergence of the new work oriented society.

Work Ethics of Calvanism and Puritanism

Tilgher (1958 and 1962) has noted that Calvanists only valued work as the means of establishing the kingdom of God on earth. Calvanism held it was the will of God for all to extract the maximum amount of wealth from his work. In this respect Kazanas (1972) has pointed out that Calvanism added a new element to the Christian meaning of work, that of profit.

Puritanism taught that it was one's duty to extract the greatest possible gains from work. Success in one's work was most easily shown by profit. Perhaps, as has been suggested in the literature, motivation in terms of financial reward may be the only reason that many people still work at jobs that are considered to be highly repetitive or boring industrial jobs.

Current Views on the Meaning of Work

The industrial revolution with the newly developed sources of power and utilization of iron and steel enabled machines to be built for mass production of goods. As a consequence of industrialization and urbanization the place of work was removed from the home to the factory. Work that was once a family activity in pre-industrial society now for many people became a mindless means of production (Josephson et al., 1962).

Thus, as Marx (1894) postulated the activity of

work had now become extraneous to the worker. The secularization of work noted by Berger and Berger (1972) has apparently given rise to new extrinsic perceptions of the meaning of work related to the necessity of survival and economic reward.

Van Kaan (1971) reports that in the last fifty years a new type of man is emerging, one whose values center around leisure rather than work and production. Ginzberg (1971) has supported Kaan's notion and has suggested that the same forces that created new attitudes towards religion, sex, materialism and the family are changing the face of work. Ginzberg's perception of the changes in the attitudes towards work may be summarized as follows:

(1) Not all people feel it is worthwhile to work unless the work that is available interests them or offers a decent wage and opportunity for advancement.

(2) Workers now feel they need a voice in determining work schedules and production norms.

(3) Bonds between the worker and the institution that employs him have been loosened; many employees now deliberately avoid investing much energy or effort in the organisations for which they work since they believe the organisation will put its needs above those of the workers.

Kahn (1973) has implied that since industrialism changed the face of work, people are now just fitted into jobs. Little thought has apparently been given to improving work situations that degrade, humiliate, exhaust or persistently bore the worker. Weinstein and Weinstein (1974) have suggested that industry has created and continues to maintain four sources of alienation that have given work "negative" perceptions to the worker. Those sources of alienation have been suggested by these researchers as being:

1. alienation from task; the worker does not understand his contribution to the final product.
2. alienation from labor; part of the worker's labor is taken in the form of profits.
3. alienation from control over work; the worker does not determine what to produce, how and when to produce.
4. alienation from the consequences of work; the worker does not determine how his production will be used (p. 203).

Work however has still continued to be viewed as an important human activity. As McNeil (1974) stated

> ... the impact of prolonged unemployment not only affects the internal psychological state of the unemployed individual, but alters his relationship with others (p. 633).

Loss of work by males has been noted as causing deterioration of personality and disintegration of emotional

stability. Paradoxically, while work may be a source of alienation and dissatisfaction to the individual, work has also been viewed as an activity that promotes an individual's mental well being.

Rinehart (1975) has noted that work still has a dimension of morality; these people who work regularly still rate themselves more highly than those people without work. The literature has also noted the dimension of self-esteem and individual prestige as still being differentially distributed among occupations. White collar workers appear to have more honor and status than workers involved in manual work.

However, new perceptions of work have implied that this activity should enable the individual to become the person he or she wants to be. In this respect Ginn (1979) stated "our work, our career can give us a particular sense of who we are in the world" (p. 49).

Thus, it would seem that meanings attached to work are not constant but slowly evolve to parallel changes in society. Kuppuswamy and Agrawal (1966) have suggested that the meaning of work may vary from place to place. Neff (1977) has also supported this notion and has pointed out that the meaning of work and the hierarchy of values attached to different kinds of work varies sharply from society to society. In this respect it would seem reasonable to suggest that the societal values as reflected by the programs in the school may influence the way children acquire meanings about work.

IV. Factors Affecting the Adolescent Perception of Work

It has been established in the literature that the young person in a modern industrial society has become far removed from the world of work activities. However, as Crow and Crow (1956) have stated

> Adolescents like to work if the work is of their own choosing and represents a felt interest ... their interest in the purpose of work is so keen that they do a good job (p. 208).

Schneiders (1960) has suggested that the adolescent views the various aspects of life as ideals.

> Ideals are derived from the cultural milieu, the home, the church and the school ... by means of imagination the young person can project himself into future roles and these roles often have an idealistic cast (p. 302).

It would seem reasonable to suppose that the young person in school preparing to enter the world of work and in the process of forging an occupational identity, may perceive his future work behaviour in an idealistic manner. A study of young people in Britain by Carter (1962) reported children's perception of work was affected by a variety of factors. These factors were (a) the glamour of a job, (b) excitement and opportunity offered by work, (c) variety of tasks and (d) the mystique associated with certain kinds of work.

While children may acquire some of their system of work habits within the framework of the school, their

perception of the reality of the adult world of work may well be in the realm of fantasy and imagination. Carter (1962) also reported young people had definite ideas about what they wanted from work. For some of the boys and girls wages were important. As Carter has suggested this particular emphasis may stem from a negative perception by some young people that intrinsic satisfaction was not to be found in work. Other young people in this study however felt that work would be interesting and provide good future prospects for advancement.

Thus, young people appear to perceive work as an activity that would be able to satisfy their material, interest and achievement needs.

Erikson (1962) has noted that by the time of adolescence the child has adjusted to the inorganic laws of the "tool world" and is eager to become involved in productive situations. Erikson has also observed that young people approaching adulthood need to find a basis for fidelity to their society by acquiring the basic habits of industry and attitudes to work. However, as Schneiders has noted the perceptions of the adult world held by adolescents are often idealistic and as such may be far removed from reality.

Menniger (1964) has postulated that an individual's perception of work depends in no small way on the special training and education that goes on in school. Since work behaviour would seem to be acquired developmentally through

aculturation, it would seem rational to imply that the effects of the strong traditional role of religious involvement in education in Newfoundland schools may have provided young people with a perception of work as being a major and fulfilling role in life. It would also seem logical to suggest that the different kinds of programs established for students in Newfoundland schools, such as industrial arts, home-economics and pre-vocational education programs, may have particular educational emphases that provide students with particular views about work.

The notion of adolescent idealism of work tenets has been supported by Maizels (1970). This researcher has reported that young people at work may fail to experience the same degree of encouragement or praise as given by teachers in school for learning new tasks or for work completed. While the school may reinforce a sense of individual achievement in work activities, industry may be concerned solely with getting a job done rather than providing praise.

Much of a person's behaviour has been seen as being pre-determined by his relation to the society in which he lives. McNeil (1974) stated "being born into a society of others sets standards for almost all aspects of our behaviour and influences our behaviour, perception, motivation and thinking" (p. 577). One of the socially tolerated ways of integrating young people into the adult world has been noted by Muensterberger (1975) as being the activity

of work.

Therefore, the way young people perceive work in a particular society would seem to depend on the values and attitudes held by the socializing agencies of the family, the church and the school. It would seem reasonable to imply that the particular values and attitudes towards work that have allowed Newfoundland to adapt successfully to their particular geographic and economic environments would provide young people with a positive orientation to work.

Borow (1976) has noted that it is the major task of the school and home to provide the adolescents with a realistic conception of their imminent role of workers in society. Since the work activity of the parents in western society has become less visible to children, young people have appeared to become increasingly walled off from first hand experience of work. In this respect it would appear rational to suggest that the nature of the programs provided by the school for the purpose of giving young people an orientation to the skills of the world of work may be of particular importance in helping the adolescent achieve a vocational identity.

V. Meanings Attached to Work by Adolescents

Super et al. (1963) have suggested that in the process of building a vocational identity the young person is attempting to implement a self-concept. Katz (1963) has hypothesized that a hierarchy of values controls the building

of such a vocational self-concept.

Katzell (1964) has defined a value in terms of "the magnitude of a stimulus or a job (work) characteristics" (p. 346). Particular aspects of work for example such as financial reward, number of working hours and the opportunity to work with other people, may provide the individual with particular personal values and meanings about work. Thus it would seem reasonable to imply that when an individual is asked what work means to him, we have asked in effect which particular work stimuli appear worthwhile or otherwise.

Studies of high school students by Singer and Steffre (1954) and Dipboye and Anderson (1959) have reported that boys perceived work as offering them the opportunity for reward, power and the chance to be independent. Girls, however, tended to think of work as providing the opportunity to interact with other people and providing a focus of interest in their lives.

A longitudinal study of adolescent occupational values by Gribbons and Lohnes (1965) reported that in general over the period between eighth grade and leaving school

> ... boys are persistently interested in salary and prestige (esteem); the girls not so. The girls are persistently interested in personal contact and social service; the boys less so and decreasingly so over time (p. 251).

Gribbons and Lohnes reported that the students in their study appeared to have learned their work-related stereotypes very well.

Since students have been viewed as being remote from the world of work, whether or not particular work values are permanent and whether they influence the individual's selection of a job when leaving school would appear to be still an unanswered question.

Recent studies have shown a new trend in the perception of work by young people. Gooding (1971) has observed that the work values of adolescents are now apparently concerned with individuality and the need to humanize the world of work. Project Talent (1971), a study by the American Institute for Research, reported high school students are no longer concerned with job security and the opportunity for promotion. New work values expressed by students have emphasized the freedom to make personal decisions on the job and the need for more interesting work.

A series of studies by Yankelovich (1972) with college students would seem to support the findings of Project Talent. Young people are concerned with making work more challenging and want the opportunity to express themselves in their work. However, Yankelovich's studies with older youth may reflect expressions about work from a particular segment of the youth population.

A study of the work values of sixth, ninth, tenth and twelfth grade students by Witjing (1977) reported girls are still apparently characterized by an intrinsic work orientation with emphasis placed on activity involvement and taking pride in one's work. Boys placed high emphasis on the

extrinsic reward of work such as money and social status. As Witjing stated the differential results of this study have suggested "that boys may be more concerned with the realities of impeding independence and are therefore more focused on the immediate rewards of work necessary for self support" (p. 63).

The literature has indicated that young people perceive the meaning of work in different ways. Studies have shown that in spite of a possible conformity in work values held by students, differences in the value and meaning of work may be differentiated on the dimension of sex.

VI. Meaning of Work and School Program

A study to determine the meaning of work to students in high school, vocational - technical and college preparatory curricula by Hannah (1974), reported no difference was apparent in the meaning of work to students in either of these curricula. However, Moore (1975) using the same Kazanas Meaning and Value of Work Scale(s) (MVWS) as Hannah, reported twelfth grade general business education students had a more comprehensive conceptualization of the meaning of work than students in consumer - homemaking or industrial arts.

Moore also observed that the work values of students in business education and consumer - homemaking curricula as being a more intrinsic nature than the work values of students in the industrial-arts curriculum. A possible

explanation of this finding may be the predominantly female enrollment in the consumer - homemaking and business education programs in this particular study. Female perceptions of work have been consistently reported in the literature as being intrinsic in nature.

Davis and Harrison (1975) reported the results of a study to determine the efficacy of various high school programs as showing students in vocational programs placed significantly greater emphasis on security than students in academic or general school programs. Students in general education programs placed significantly less emphasis on achievement than students in vocational and academic curricula.

This last difference would seem to be logically explained by the fact that students in academic and vocational programs are preparing for entry to institutions of post secondary education or occupations that have established performance standards of entry. In this respect it would seem reasonable to suppose that different curricula may reinforce the particular career aspirations of the students who selected these programs.

Schab (1975) has suggested that of all the students who enter the world of work from high school, graduates from business education programs may be the best prepared, in comparison with students in other school programs, to cope with the demands of the world of work. Schab has noted that college bound (academic) students were still looking ahead to further education while industrial arts students may have

difficulty in entering unionized trades.

This study, of over a thousand business education students, found that the work philosophy of these students most resembled the Protestant work ethic. However, the lack of cross-sectional data on the perception of work of students in other programs would seem to be a major weakness of Schab's study. However, it might be reasonable to suggest that a particular type of curriculum may have emphasized specific aspects of students' perception of work.

A longitudinal and cross-sectional study of students in the ninth and twelfth grades by Kapes and Strickler (1975) focused on the changes in students' work values over vocational (trade) academic, secretarial, business and home-economics curricula. These researchers reported that exposure to different curricula "does appear to make differences in 'affective outcomes' as well as (differences) in the skills and knowledge learned" (p. 91).

Interest and satisfaction with work were important to students in all curricula; their work values increased for academic students while decreasing in importance for business students. The importance of salary or financial reward from work increased for students in all curricula except home-economics.

Contrasting with the results reported by Davis and Harrison (1975), the value of security in terms of always being able to find a job in one's work decreased in importance for students in all curricula except home-economics. As Kapes

and Strickler have importantly noted, some of the differences in work values may lie in the differences which each group of students brought to each curriculum as well as resulting from the differences created by each curriculum.

Kapes and Strickler observed that since several of the curricula in their study were heavily sex biased, sex and curriculum may have interacted to produce differences in the way work values were perceived by students. It would also seem reasonable to suggest that students selecting a particular curriculum environment may be attempting to implement their vocational self-concept (Super, 1953) within the framework of the programs provided by the school.

A study by Mietus and Gnidziejko (1975) examined the work ethics of students and teachers involved in college-preparatory and vocational curricula. The three work ethics examined were (a) classical (Protestant) work ethic, (b) consumer work ethic, and (c) meaningful work ethic. These researchers reported differences in work ethics between groups according to curricula environment and also between schools in different locations.

This study found students in vocational programs valued the consumer work ethic more highly than students in academic curricula. Mietus and Gnidziejko (1975) have postulated that students in vocational programs perceive a greater need for the economic rewards of work in the immediate future than students planning to go on to college. Male students placed a significantly higher value on monetary and

social returns from work than females. A possible reason for this would seem to be that male students have more immediate needs for money to provide for social situations than females.

While an earlier study (Ward, 1974) had reported that vocational instructors may influence their students towards the classical work ethic, teachers in this study were found, by Mietus and Gnidziejko, to be oriented toward the consumer work ethic.

These researchers have also suggested that differences in parental and socio-economic background may be factors that influence students' perception of work. In this respect, students in academic and vocational programs in one school valued the classical work ethic more highly than vocational students in two other schools in the study.

Other findings reported by Mietus and Gnidziejko (1975) apparently support the concept of a new trend in the meanings attached to work by youth (Gooding, 1971; Project Talent, 1971; Yankelovich, 1972). Students in college preparatory and vocational curricula were reported as preferring work that was interesting, meaningful and challenging; females in the study however emphasized these ethics more than males, perhaps because of their lesser concern about the need to obtain money.

Mullen (1976) in a study of self-concept and the meaning of value of work of vocational and academic high school students reported no significant differences in how

the meaning of work was perceived with respect to curricula. However, Mullen noted that females have a significantly broader conceptualization of work than males. This study would seem to support the conclusions reached by Hannah (1974) using the same Kazanas MVWS. Mullen concluded that vocational education does not affect the formation of work conceptualizations.

McGough (1977) reported similar results as Mullen with respect to the meaning of work, from a study of disadvantaged and non-disadvantaged students. McGough has suggested however that differences between groups with respect to the meaning of work may either not in fact exist or the meaning of work scale developed by Kazanas may not be sensitive enough to measure differences.

Thus, while some studies have indicated that meanings attached to work by students may not be related to their exposure to a particular type of curriculum environment other studies have suggested such a relationship may exist. Since the meanings attached to work appear to be diffuse, it would seem reasonable to suggest that the results of a particular study on this subject may well depend upon the nature of the instrument used.

VII. Curriculum Structure and Vocational Identity

Super and Overstreet (1960) have suggested that a typical ninth grade boy (a) needs to be given a broader perspective on the world of work and (b) needs to develop

an understanding of different occupations. From the curriculum perspective this would seem to imply that beyond the ninth grade school programs should be devised to acquaint students with the characteristics of the world of work. For most students in North America such programs have been either industrial-arts, home-economics or more specialized vocational training in the last years of high school.

However, in spite of the access to such programs by many students, the literature has noted that a significant number of high school students are apparently undecided about their future careers. A study of the development and reasons for adolescent vocational choice by Powell and Bloom (1962) noted that youth were frustrated in attempting to make an intelligent selection of a vocation because of their lack of knowledge of vocational fields and opportunities. Brenton (1967) in a study of Canadian youth noted that a significant proportion of students in the eleventh grade in Newfoundland schools were unable to state the area of their future career.

A nationwide study across thirty-three states of America by Noeth et al. (1973) reported an expressed need by students for help and assistance in such areas as career exploration, career planning and for a greater knowledge about the world of work.

Traditional vocational development theory (Super, 1953) has viewed vocational selection as a positive "seeking-out" process by the individual to implement a

vocational concept. Thus, it would seem logical to suggest that a curriculum that allows a student to explore vocationally oriented subjects may help the individual form a positive vocational identity. Nelson (1962) has suggested that a certain vocational realism may be achieved by finding out what occupational activities a child rejects ... rather than only asking about his choices" (p. 754). In this respect a curriculum that allows the student to explore and reject certain vocational choices may focus his attention on what he does not like rather than what he likes in terms of vocational activity.

Tiedman and O'Hara (1963) stated that "career development includes an orientation towards the world of work which involves the psychological process of forming an ego identity" (p. 4). These researchers have postulated that the (vocational) ego-identity is formed through a process of differentiation and integration which typically begins when the individual encounters a problem associated with career decisions made in school or work. Thus, a curriculum structure that provides high school students with the opportunity to make realistic decisions regarding vocational options, as in the pre-vocational program in Newfoundland's district vocational schools, may provide the student with useful experience in coping with career decisions in the world of work.

Galinsky and Fast (1966) have postulated that a well developed sense of identity is an important prerequisite for

choosing a life's work.

> Self-doubts and feelings of unworthiness make vocational decisions extremely difficult. When no firm identity has been achieved one is constantly beseiged by questions about who he is and what he can do (p. 92).

Case material studied by Galinsky and Fast indicated that individuals experiencing problems in vocational choice can be helped more readily if they have a well integrated sense of ego-identity than individuals in the same life stage who are still in the fantasy stage of vocational development.

Hereshenson and Roth (1966) have viewed vocational development as a decision-making process brought about by two trends; these trends are (a) the narrowing of vocational possibilities and (b) the strengthening of those possibilities that remain. This would seem to imply that vocational development of the individual may be enhanced by a curriculum structure that allows a student to explore a variety of options that selectively narrow in focus at the high school grades.

Gross (1967) has also viewed the development of an individual's vocational identity as a matter of rejecting alternatives rather than a matter of seeking out a positive vocational self-concept.

> ... the direction of the vocational decision is less than a matter of moving toward a solution of a problem, than it is of moving away from a situation that is undesirable (p. 423).

In this respect it would appear reasonable to suggest that a curriculum structure that allows students to reject activities they do not like and to continue exploring other options would be useful in helping students reach decisions about their future careers.

The notion that decision-making may affect the vocational development of the individual is supported by Sharf (1970). In a study of college males Sharf reported that some students became more aware of vocational possibilities because they were forced to make decisions between occupational alternatives. However, this vocational activity, as a result of decision-making and future choice, may also be, in part, a function of general maturity.

Housley (1973) has supported Super's (1953) notion that by entering an occupation an individual seeks to implement his vocational self-concept. Housley has suggested that vocational self-images are meaningful and may be selected by the individual to acquire experience in attractive activities and to avoid distasteful roles.

A study by Housley (1973) that investigated the narrowing process of vocational choice of students in grades nine and twelve, reported that students were more certain of their rejected vocational interests than of their accepted vocational interests.

> Vocationally speaking, a person is more certain of activities he does not want, than about activities he desires (p. 288).

Jepsen (1974) has noted that obtaining and processing information about oneself and vocational alternatives is a common activity among adolescents.

> Adolescents are involved with several decisions among options within the realms of education, work and leisure (p. 17).

This type of activity would seem to imply that a requirement of high school programs should be to impart information about the world of work in order to help students make vocational plans.

However, as Egner et al. (1974) have observed, the provision of vocational information alone has little relevance to the individual attempting to develop a career pattern.

> While information is part of content, how to make decisions should be concerned with process and strategies. A curriculum that will offer a framework of options, personal value clarifications and an information system is imperative (for students) (p. 14).

Pearson (1975) has suggested that self-analysis of one's past successful experiences is the first stage in beginning the career decision-making process. According to Pearson this notion "capitalizes on the principle that people are products of their past experiences and that emphasizing (successful) accomplishments helps them become aware of their worth" (p. 22).

Therefore, if vocational development is a lifelong process, then a curriculum structure that allows students to identify and pursue particular vocational interests, rejecting those interests they do not like, may indirectly

focus students towards more positive aspects of work.

VIII. Sex Differentiation and Work Roles

Division of labor and the assignment of work roles and statuses on the basis of sex has been present in all societies. It has been generally accepted in the literature that traditional sex role assignments are transmitted from generation to generation by the socializing agencies of the family, school, and also by the norms of society.

A study of the development of the vocational interests of ten-year old boys and girls by Tyler (1955) found broad attitudes, such as those about one's sex and about work, are well established by the ten-year old level. These broadly held attitudes appear to be well established early in childhood and form the basis of a generalized value-attitude system. This system has been viewed by Tyler as forming the deeper levels of personality content. Thus, perceptions of work formed early in life may be long lasting.

The manner in which an individual develops a perception of his future adult role would appear to result from the interaction of a number of factors. Hall and Keith (1964) in a study of young children, reported boys in the lower socio-economic classes demonstrated clearly more masculine role preferences than boys in the upper class. Girls in the upper class were found to perceive themselves in slightly more feminine roles than their contemporaries in the lower class. Hall and Keith have suggested that the specific

traditions and values held by a particular social class may determine the primary personality and vocational development of children, especially in the case of boys.

The role of women in the workforce has been recorded as changing in terms of their greater participation and involvement in different kinds of work. However, work may still mean different things to individuals on the basis of a person's sex. Minuchin et al. (1969) reported that while pre-adolescent boys talked centrally about their future work, girls still apparently view marriage and social life as being their central vision of the future.

> Children of this study saw the future in terms that were pre-structured by social convention, adultlike in orientation and essentially irrelevant to their current interests and activities (p. 326).

It is still apparently accepted in our society that adult males are perceived as workers, while adult females are thought of as being wives and mothers. Neff (1968) has postulated that this concept of work being viewed as a primarily male activity was brought about by the industrial revolution and consequent urbanization.

This view has been supported by Smith (1970). Smith has noted that towards the end of the nineteenth century women became freed from the necessity of being actively involved in economically productive labor. The freedom of women from the need to work allowed them to become more feminine and domestic in their social ways. This change in the economic work role of women at that time was accompanied

by differentiation of wages according to sex and the notion of unpaid work in the home. This would seem to imply that the work of women was valued less highly than the work of men.

A characteristic of western society in recent times has been the remoteness of children from the world of work. However, as Rose (1971) stated

> (the child) nevertheless acquires from the culture at an early age rather powerful sets of attitudes about work through the mechanism of unconscious social interaction (p. 1).

This would support Tyler's view that children at an early age learn to perceive themselves in certain occupational roles and as well may also acquire different perceptions and meanings of work based on traditional sex stereotypes. Boys seem to learn to perceive work as a means of obtaining financial reward that is necessary to maintain a family in security. Girls may learn to view work as a temporary activity and have more concern with the social and personal interactions that occur in the work place.

Looft (1971) has noted girls seem to learn especially early in life that certain adult work roles are open to them and that these may be few in number. Siegel (1973) has inferred that parental expectations may also establish a child's perception of future work roles. These perceptions initially established within the family may be reinforced by the child's observation of other adults behaviour portrayed on television or described in books or by the activities and

programs that take place in the school.

A nationwide study of eleventh grade students in America by Noeth et al. (1973) found that over fifty percent of the girls selected vocational preferences that fell into three job families. These job families were (a) eduation, (b) social services and (c) clerical secretarial occupations. Only seven percent of the boys selected jobs in these categories; boys were found to be more likely than girls to select occupations with a technical and scientific emphasis.

The categories of occupations selected by more than half the girls in this nationwide study would seem to emphasize social contact and interaction in the work situation. Vocational preferences of a technical nature selected by boys would appear to focus on work activities of a non-personal and practical nature.

The differences in vocational preferences according to sex may result from different emphases given to boys and girls in the socialization process in the home and possibly by the nature of programs offered in the school. Whether or not boys and girls perceive different meanings in work as a consequence of different emphases given in the aculturation and education processes would seem to be an important question to answer.

If different kinds of work provide different kinds of rewards and fulfill different personal needs on the basis of sex, then some basis may exist for concluding that the meaning of work may be differentiated on the basis of sex

difference.

Research on sex role stereotypes and occupations has indicated that jobs associated stereotypically with high levels of competence (whether mental or psychomotor), rationality and assertion are generally viewed as masculine roles. Occupations stereotypically associated with depending, passivity, nurturance and interpersonal warmth have been usually perceived as female roles.

Shinar (1975) citing early research by O'Dowd and Beardslee (1967) has noted that occupations may be described along several dimensions. These variables have been suggested as including (a) personality variables and (b) interpersonal interaction styles associated with each occupation. It would seem logical to imply that males and females in accepting traditional work roles may be implementing their different perceptions about the meaning of work in a real way.

Following a longitudinal study of sex role division in adult occupations, Shepard and Hess (1975), reported kindergarten children were extremely conservative and traditional in their projected occupational choice. However, by the grade eight level children were found to be significantly more liberal in assigning male or female roles to different occupations.

These researchers have postulated that by the grade eight level students approaching adolescence are reaching for new identities. However, Shepard and Hess have also

noted that in adult life individuals revert to traditional views about occupational sex roles. This would appear to be a failure on the part of young people for some reason or other to acquire an occupation outside traditional work roles.

Malmquist (1978) has pointed out that the school may be faulted in its function as a socializer. As Malmquist stated "the foremost accomplishment of the school appears to be its role as a moralizing and socializing agent to produce conforming people" (p. 95). In this respect Malmquist has observed that attitudes towards work held by adolescents should be viewed not only in a psychosocial context but also with respect to the authority of parents and teachers.

Thus, it would seem rational to imply the particular role a school may play in transmitting vocational "messages" to its students, through the actions of its staff and purposes its programs, may either provide the student with new perceptions about work or reinforce traditional attitudes about occupational sex roles.

IX. Q-Methodology

Q-methodology is a general name used by Stephenson (1953) to characterize a set of philosophical, psychological, statistical and psychometric ideas oriented to research on the individual. The publication of Stephenson's "Study of Behaviour" (1953), has been followed by a gradual development of interest in the potential usefulness of Q-methodology

primarily for clinical research.

English and English (1958) have defined a Q-sort as:

> a personality inventory in which the subject (or someone making judgments about him) sorts a considerable number of statements into piles that represent the degrees to which the statements apply to him. Each statement gets a score indicating (the) relative strength within the individual of the quality or trait it represents (p. 433).

Q-technique has been defined by English and English as the statistical procedure for correlating the scores of a person obtained by Q-methodology, or a series of tests or correlating the scores of different individuals on the same test.

Q-methodology as a research tool has been viewed in controversial terms by researchers. Wittenborn (1961) for example has published a critical review of some fifty studies using this methodology, but in general the researcher has had a positive view concerning the usefulness of Q-methodology for application to certain areas of psychological research. Other researchers such as Cronbach and Gleser (1953), Wylie (1961) have raised procedural and methodological questions about Q-sorts and Loevinger (1965) has raised doubts about this approach to psychometric sampling entirely.

However, in terms of the application of Q-methodology to educational research Kerlinger (1973) stated "Q is a flexible and useful tool in the armamentium of the psychological

and educational investigator" (p. 593). Thus, while Kerlinger has emphasized the use of Q-methodology as a means of studying individuals, he has allowed the use of this research method to compare the relative frequencies of characteristics of groups of individuals.

Structured Q-Sorts

Stephenson (1953) has differentiated between R (normative) methodology and Q-methodology.

System 1. - (R). Tests are applied to a (random) sample of persons, and the correlations between the tests are factored.

System 2. - (Q). Persons are applied to a sample (universe) of statements or the like, and the correlations between the person arrays are factored (p. 51).

Therefore, if the sample of statements has been structured to represent a theory, then the response arrays of the individuals applied to the set of statements that comprise that theory are in fact tests of that theory.

Thus, the sixty-item Q-sort developed by Neff (1963), and used by the investigator in this study, postulates a theory of work behaviour. The sixty items that comprised the (see section on instrumentation) Neff Work Sort have been placed in a three-way Fisherian balanced block design (see Figure 1). In terms of balance, 'positive' statements must be balanced by 'negative' statements. In the case of the Neff Work Sort, for example, a positive statement

(a) Work gives me a chance to develop new ideas, has been balanced by a negative statement, (b) If you have to work you just have to give up thinking.

Cronbach (1953) has specified that the statements that comprise Q-sort must be (a) relative to the domain being described, (b) should apply to as many dimensions within the domain as possible and (c) must be capable of maximum variability along a continuum. Stephenson (1953) has suggested that care must be taken to ensure that the statements that comprise the design are concise, clear and representative.

Talbot (1971) has suggested that items should be derived from the people in the samples being studied. With respect to the instrument used in this study, Neff (1963) derived his statements about work from writers statements and his own personal experience in the area of vocational rehabilitation.

Forced Choice Method For Q-Sort Array Distribution

Stephenson (1953) recommended that the distribution of the sort array be a flattened-bell-shaped distribution. Block (1956) in a comparison of the unforced and forced sorting distributions suggested that the forced method is useful when the order of the items that comprise the sort is of importance.

Livson and Nichols (1956) noted that Q-sorts that allowed the subject a free choice of item placement required greater test-retest reliability, and recommended that the

sorting distribution should be rectangular.

Wittenborn (1961) has noted a general tendency among investigators to require their subjects to distribute their sorts in a quasi-normal fashion. This researcher also noted that no general agreement existed among researchers at that time on the issue of forced or unforced sorts.

Nunnally (1970) has suggested that if comparative responses are required with respect to all stimuli in a set of items, then a distribution in the form of a curve whose mean and standard deviation is known should be used. This type of forced choice has been criticised, as presumably the subjects would employ different shapes if left to their own devices.

Nunnally has argued that (a) because so many things in nature are distributed in approximately a normal fashion and (b) statistical methods applied to the data require a normal distribution then a forced choice method should be used.

Talbot (1971) has noted that the issue of forced or unforced method of distribution of Q-sort arrays has not been resolved. As this researcher has pointed out, before the advent of computers there was a great computational convenience to be served by forced distributions.

Kerlinger (1973) has also noted that definitive evidence for the superiority of either the forced or unforced method is wanting, so that opinion must rule. However, Kerlinger stated that whatever the type of distribution used,

"the important thing is to force individuals to make discriminations that they will not often make unless required to do" (p. 596).

It would seem, therefore, that depending on the type and purpose of the study, and the number of subjects involved, the researcher has to select the most appropriate manner of response distribution.

With reference to the investigator's study, because of (a) the size of the samples and (b) the comparative nature of the study, a quasi-normal response distribution would seem to be appropriate.

Advantages of Q-methodology in Educational Research

Since Q-methodology has simply required the subject(s) to sort and arrange a number of statement cards in a specified fashion, it would appear to remove the stress producing situation that may be felt by some subjects involved with normally scored tests. Further, in Q-methodology no answer is "correct", neither however is an answer "wrong".

Sheldon and Sorenson (1960) have concluded that "since Q-sorting presents the subject with a complex task, it (the results) would be presumably hard to fake" (p. 150).

Kerlinger (1972, 1973) has noted that Q-methodology can be used for comparing the characteristics of specific groups of individuals, which was the purpose of this study. With respect to this study samples of students have been made up because of their membership in particular curricula environments.

Kerlinger has also noted that Q-methodology can be used to open up new areas of research, to test preliminary theories and to explore heuristic hunches.

However, since the groups and samples have been selected for specific characteristics and not from the general population, it is rarely possible to generalize the data outside the groups.

X. Summary

The term work has been interpreted in numerous ways. For some people work has been perceived as a purposeful, central activity in their lives and a source of satisfaction. For other people however, work may be perceived as an activity that has to be tolerated in order to earn a living.

While researchers (Kazanas, 1973; Neff, 1963, 1977; Quey, 1968; Rinehart, 1975) have defined the primary characteristics of work, most people appear to define work in terms of secondary meanings. These secondary meanings attached to work have been seemingly imposed by the social, cultural and religious forces that act upon the lives of people.

The way in which work has been perceived by people has not been constant throughout history. Researchers have noted that the meaning of work to people has in turn varied from that of slavish labor to a source of religious and moral value (Arendt, 1958; De Grazia, 1964; Neff, 1977; Tilgher, 1958, 1962). Studies of the forces that seem to

affect the perceptions of work in modern society have noted that new attitudes towards work appear to exist (Ginzberg, 1971; Van Kaan, 1971). Not all people seem to feel the need to work and many occupations have apparently become sources of boredom and humiliation to workers.

Although some work activities may be dissatisfying research has indicated that loss of one's job seems to adversely affect the worker in a psychological sense (McNeil, 1974). It has also been noted in the literature that some types of work may be a source of self-esteem to the worker, while other types of work may be regarded less highly.

Researchers have noted that the school appears to play an important role in preparing young people for entry into the adult world by providing them with particular views about work that reflect societal values (Borow, 1976; Maizels, 1970; Menniger, 1964; Schneiders, 1960).

Studies of young people have shown traditional work values held by young people may have changed (Gooding, 1971; Mietus & Gnidziejko, 1975; Project Talent, 1971; Yankelovich, 1972). Young people seemingly no longer emphasize job security and promotion, but have expressed the desires to humanize work and make their own decisions in the work situation.

Comparative studies to determine a possible relationship between the meaning of work held by students enrolled in particular school curricula have produced conflicting results. No apparent difference in the meaning of work held by students

was found between students enrolled in vocational programs and students enrolled in academic curricula (Hannah, 1974; McGough, 1977; Mullen, 1976). However, similar studies have reported differences in the meaning of work and work values held by students enrolled in vocational, business education, academic and general curricula (Davis & Harrison, 1975; Kapes and Strickler, 1975; Mietus & Gnidziejko, 1975; Moore, 1975; Schab, 1975).

Although vocational curricula have been developed to help acquaint students with the characteristics of the world of work, students still appear to have difficulty in making a future career choice (Brenton, 1967; Noeth et al., 1973). Research has shown that students are often more certain of the occupational activities they reject (Gross, 1967; Hereshon & Roth, 1966; Housley, 1973; Nelson, 1962). In this respect some researchers have suggested that a well developed sense of vocational identity is an essential prerequisite to choosing a career (Galinsky & Fast, 1966), and a curriculum that provides a framework of options was imperative to help students clarify their personal values (Egner et al., 1974).

Research has shown children at an early age appear to hold broad attitudes and ideas about work. They seemingly identify themselves with certain occupational roles (Tyler, 1955). These attitudes about work have been viewed as being engendered from the family and other influences. Such attitudes might evolve and persist in such a way as to

affect an individual's career decisions.

While the literature has noted a general liberalization of traditional sex-stereotyped occupational roles however, work still may mean different things to boys and girls. Traditionally work has been viewed as a male activity, while girls appear to have more concern with social and personal interactions in the work place (Looft, 1971; Minuchin et al., 1969).

Differences in the meaning of work that may exist between boys and girls may result from different emphases in the socialization processes in the home and in the school. The school has been faulted by Malmquist (1978) because of its role in transmitting traditional attitudes about occupations through the authority of the parents and teachers.

Q-methodology

The status of Q-methodology as a research tool has been viewed in controversial terms (Cronbach & Gleser, 1953; Wylie, 1961). However Kerlinger (1972, 1973) has noted the usefulness of Q-methodology to test new theories and explore new areas of research.

CHAPTER III

DESIGN OF THE STUDY

I. Introduction

The purpose of this study was twofold, firstly to determine the extent to which pre-vocational programs provided students with a special perception of work and secondly, to investigate variations in the meaning of work held by high school students as a result of their exposure to either a pre-vocational or an industrial arts - home economics or an academic curriculum environment.

The literature has suggested that work may be defined in many ways and that variations in the meanings of work held by individuals may be influenced by many factors. Young people about to leave school appear to strive towards the formation of an occupational identity; this identity may be affected in no small way by what goes on in the school. Research has indicated that exposure to particular kinds of curricula such as vocational programs may influence the way students perceive different meanings attached to work.

The purpose of this chapter has been to describe (a) the criteria for the selection of the samples, (b) the educational characteristics of the curricula examined, (c) the nature and development of the instrument, (d) the

methodology of the study, (e) the trial collection of data and (f) the processing of data.

II. Selection of Samples

The selection of student population samples for inclusion in this study was made on the basis of a high school either (a) participating in a pre-vocational program operated on a shared basis with a district vocational school or (b) the provision within the curriculum of the high school of industrial arts and home economics programs or (c) the curriculum of the high school being academic in nature, that is to say a vocationally oriented program of any nature was not provided for students in the school.

Criteria for Pre-Vocational Samples

The criteria for the selection of a school participating in a pre-vocational program were judged by the investigator to be (a) that a minimum of seven options be available for student selection on entry to the pre-vocational program at the grade nine level and (b) the pre-vocational program had been operational for at least six years.

A pre-vocational program that provided less than this minimum number of options was considered by the investigator as being likely to be limited in its capacity to provide students with a broad knowledge of occupational clusters. A pre-vocational program with an operational life of at least six years was also considered necessary,

in order that three years of operation at the grade eleven level would have provided sufficient time for curriculum stability.

Two pre-vocational programs were selected for the purposes of this study according to the foregoing criteria. These pre-vocational programs were at (a) District Vocational School Conception Bay South (Seal Cove) and (b) District Vocational School Placentia.

The larger sample of students was taken from grades nine, ten and eleven in the high schools participating in the Seal Cove pre-vocational program. These students were from Holy Spirit School, Manuels, and Queen Elizabeth Regional High School, Foxtrap.

A second sample of pre-vocational students in grades nine, ten and eleven levels was drawn from Laval High School, Placentia. The purpose of this second sample was to provide comparative data.

Grade Eight Baseline Data

While the primary purpose of this study was to determine the meaning of work to students in pre-vocational programs, another aspect of the study was to determine if this type of program changed the way in which students perceived work over a period of time.

For this purpose baseline data on the meaning of work were sought from grade eight level students who had not been previously exposed to any form of vocationally oriented school program. For this purpose samples of grade

eight level students were drawn respectively from Holy Spirit School, Manuels and also from Foxtrap Junior High School.

For comparison purposes similar samples were drawn from grade eight level students in the Placentia area. These samples were drawn from St. Peter's Elementary School, Jerseyside and Most Holy Rosary Elementary School, Freshwater.

Industrial Arts and Home Economics

For comparison purposes with pre-vocational samples further data on the meaning of work were sought from students in industrial arts and home economics programs.

The selection criteria for these samples were (a) that these programs must be offered within the framework of the normal school curriculum, (b) the programs were to be representative of similar programs offered elsewhere in the province and (c) be located in a similar socio-economic environment as the pre-vocational samples used in this study.

On the basis of these criteria, samples of students in these curricula environments were drawn from the grade eight, nine, ten and eleven levels in Partanna Academy, the John Burke Regional High School, Grand Bank, and the Marystown Central High School.

The samples from the grade eight level in these curricula environments were drawn to provide comparison data on the meaning of work with grade eight students who had not been exposed to any form of vocational program.

Academic Samples

To further provide comparative data on the meaning of work further data were sought from samples of students whose school curriculum was judged to be purely academic in nature.

The criterion for selecting these samples was simply that the school program did not provide its students with access to a pre-vocational, industrial arts or home-economics programs.

These samples of students from the grade nine, ten and eleven levels were drawn from the Central High School, Mount Carmel, and the Enright Memorial High School, St. Joseph's, Salmonier.

III. Educational Characteristics of Samples

Pre-Vocational Program

The specific educational purposes of the pre-vocational program as stated in the authorized Pre-Vocational Course Description (1976, p. 1) were to provide the student with the opportunity to:

1. apply knowledge and intellectual ability to practical situations.
2. solve problems related to manipulative activities.
3. discover and develop technical talents and abilities.
4. study the nature, the organization, and the social importance of industry and commerce.
5. develop a better understanding of commercial and industrial occupations.

6. study family life, home living, and the attendant practical considerations.

As further stated in the pre-vocational program description:

> The pre-vocational program does not develop specialized job skills but rather provides a general introduction to occupational clusters, life on the job, and work requirements. It develops generally useful knowledge and ability of a technical, manipulative, and practical nature together with safe and efficient work habits. Planning and organizing for project and task completion and a knowledge of what it is like to work is included. Occupational information and guidance are important aspects treated by this program (p. 2).

Thus, while pre-vocational programs have been organized as a co-operative educational offering between district vocational schools and participating high schools, and as such are vocationally oriented, these programs do not prepare the student for direct entry into the world of work.

Pre-vocational programs have been structured to provide the high school student with the opportunity to select and explore a sequence of options designed to provide an orientation to a variety of occupational clusters.

At the grade nine level four options are selected by the student for exploration. The length of study in each option at this level is twenty-five hours.

The following options are provided in the pre-vocational programs examined in this study:

Seal Cove	Placentia
Woodwork	Woodwork
Metalwork	General Mechanics
Drafting	Electricity-Electronics
Electricity-Electronics	Health Sciences
Foods and Home Management	Foods and Home Management
Sewing and Crafts	Sewing and Crafts
Business Fundamentals	Business Fundamentals
Marine Based Resources	

At the grade ten level each student was required to select two of the previously studied four options for further exploration. Each option was studied for fifty hours. In the final grade eleven level a single option was selected by every student for a further hundred hours of study and indepth exploration.

Industrial Arts and Home Economics Programs

Industrial arts

At the grade seven, eight and nine levels the purposes of industrial arts as stated in the Industrial Arts Course Descriptions (September 1974) for this province were as follows:

1. To provide pre-vocational exploratory experience rather than attempt to develop knowledge and skills in a trade to the point where a high school graduate would be proficient enough to enter the work force directly since in most cases further specialized vocational education would be required.

2. To provide an introduction to the fundamentals of technology and a deeper study of those fundamentals for the student with technical orientation.

3. To provide opportunity for students to develop an interest in, and appreciation for, industry and commerce as integral parts of our economic system.

4. To provide exploratory experience with various operations, processes, tools and activities in families or clusters of occupations which are fundamental to broad technologies.

5. To provide an introduction to the multiplicity of career opportunities, and promote occupational guidance by helping the student assess his occupational potential, interests and capabilities.

6. To provide for individual student differences through a multiactivity organization allowing for a variety of talents, aptitudes, abilities and interests to be fulfilled.

7. To provide for the application of scientific principals through laboratory and shop experiences to reinforce the academic disciplines rather than provide for manipulative type activities designed solely to develop skills.

8. To provide an understanding of the interdependence among academic discipline, among vocational disciplines, and between academic disciplines and vocational disciplines (pp. 1-2).

As further stated in this course description:

> This type of program should provide both girls and boys in our schools with experiences leading to cultural and technical literacy. Exploratory learning situations and activities should be selected to provide an understanding and appreciation of industry and its workers (p. 2).

At the time this study was undertaken the activities prescribed for the grade eight and nine levels revolved around three main areas of (a) materials, (b) processes and (c) communications.

At the high school level the Industrial Arts Guide (May 1979) stated that the program objectives are similar to those of pre-vocational education. The objectives were stated as follows:

1. Develop an insight and understanding of industry and its place in our culture.

2. Discover and develop talents, aptitudes, interests, and potentialities of individuals for technical pursuits and applied sciences.

3. Develop an understanding of industrial processes and the practical application of scientific principles.

4. Develop basic skills in the proper use of common industrial tools, machines, and processes.

5. Develop problem solving and creative abilities involving the materials, processes and products of industry.

The description of the Industrial Arts Program curriculum at John Burke Regional High School, which shares its facility with Partanna Academy, was given to the investigator as follows:

Grade 8 Level - Graphic Communications.
- Wood Technology.
- Power Technology.

Grade 9 Level - Graphic Communications.
- Wood Technology.
- Metal Technology.

At these grade levels the school year was divided into three distinct terms, each term being related to the areas of study given above.

The industrial arts modules taught at the grade ten and eleven levels were:

Grade 10 Level - General Laboratory Work.
- Manufacturing.

Grade 11 Level - Architectural Planning and Drawing.
- Construction Technology.

As stated in the course outline provided by the industrial arts teacher in this school, at the grade ten and eleven levels the school year was divided into two

terms and the content of the courses was oriented towards a general comprehensive type of learning.

At the time of the investigator's visit to Marystown Central High School it was not possible to obtain a course description from the industrial arts teacher who was attending a seminar elsewhere.

A letter sent to the industrial arts teacher asking for a course description together with a follow-up telephone call did not elicit a response. A visit to the industrial arts laboratory by the investigator during his visit to this school indicated that the equipment appeared to be oriented primarily to wood skills, together with a single metal lathe.

However, the school principal was able to outline the curriculum structure for industrial arts and home economics in Marystown Central High School. At the grade seven level students were exposed to industrial arts, home economics and art. These subject areas were open to all students.

At the grade nine level students must select one of these options and continue in this area into grade levels ten and eleven. This choice of subject area by the student was not necessarily final. As the student progresses through these grade levels the time spent in either industrial arts or home economics increased from a double period in grade seven to four class periods per week at the grade eleven level.

Home economics

As stated in the Course Description for Home Economics (September 1978) the purposes of this program are to (a) allow the student to gain insight into his/her own values system, (b) to assist the student "grow" in self-development and (c) to help the student make his/her own decisions concerning important goals in everyday life.

The general objectives of this program as stated in the course description were:

1. To develop an understanding of human development through the study of individual development and interpersonal relationships.
2. To help students to establish values and select goals which will assist in improving personal, family and community living.
3. To enable students to develop fundamental skills which will be effective in personal and family living.
4. To plan consumption of goods and services according to family and community resources.
5. To create a home and community environment which is conductive to the healthy growth and development of all family members at all stages of the family life cycle. (p. 2)

The program has been structured on four core areas. These areas were:

1. Foods and nutrition
2. Clothing and textiles
3. Human development and the family
4. Contemporary homes.

Both schools in this study followed the approved course outline. The nature of student activities in this program revolved around laboratory work and related study

material. All schools providing samples from this curriculum environment introduced their students to this area of study at the grade seven level.

Comparison of Curricula Environments

The three curricula environments examined in this study (a) pre-vocational, (b) industrial arts - home economics and (c) academic, may be distinguished in a specific way that may influence the way in which a student may perceive the meaning of work.

Pre-vocational programs have been provided as a co-operative educational effort between district vocational schools and participating high schools. Thus, pre-vocational instruction took place in educational institutions that also provided pre-employment training for adults in a simulated work environment.

The pre-vocational programs and options examined in this study provided instruction for students in what are termed "unit" workshops. Thus, for example, instruction in electricity-electronics would be provided in a workshop specifically designed and equipped only for this purpose. Instruction for a pre-vocational option would be given by a qualified journeyman or a graduate from a technology level or business education program.

Pre-vocational programs have been designed to (a) acquaint high school students with occupational clusters related to each option, (b) provide the student with related

career knowledge and (c) acquaint him with the skill requirements of the range of related occupations.

Industrial arts instruction, in both samples examined, was provided in a single laboratory by a single teacher. At the John Burke Regional High School the industrial arts laboratory served as a multi-purpose unit. For example, the workbenches in turn served as metalwork benches, woodwork benches and drafting tables. The industrial arts laboratory at Marystown Central High School from this investigator's observation appeared to be primarily organised around wood technology activities together with related drafting.

In comparison with pre-vocational instructors neither industrial arts instructor was a qualified tradesperson. One industrial arts instructor had a bachelor degree in this subject area.

The home economics program in both samples studied was taught in a specially equipped laboratory by a single teacher qualified with a bachelor level degree.

The sequential decision making nature of the pre-vocational program further differentiates this program from the other samples studied. Thus, beginning at the grade nine level pre-vocational students are allowed to select (and reject) and explore elective options on a continuing basis. The nature of this selection process allowed the pre-vocational student by the grade eleven level to focus on a particular option, or occupational cluster, in order to broaden and deepen his knowledge of that area.

However, while the industrial arts and home economics programs may not provide their students with such a wide range of elective choice, the instruction in both samples began at the grade seven level. In particular the Marystown Central High School had attempted to broaden its curriculum and structure in such a way that students could select from either an industrial arts, or a home economics, or an art option.

In the schools selected for inclusion in this study as being academic in nature, no pre-vocational, industrial arts and home economics options were provided for students. The nature of the curriculum in these schools was therefore judged to be academic.

IV. Instrumentation

The Neff Work Sort

Neff and Helfand (1963) reported that a Q-sort instrument had been developed to assess the meaning of work.

The Neff Work Sort (hereafter referred to as NWS) was used by this investigator to assess the meaning of work perceived by the students in the different curricula examined by this study.

The NWS comprised sixty statements about work. The statements or items that made up the Q-sort represented the three major variables derived from Neff's theory of work.

This theory of work proposed that work is (a) perceived variably as a continuum from satisfaction to dissatisfaction,

(b) meaningful in terms of its relationship to a number of interrelated needs and (c) these meanings are focused in part on self and in part on significant others.

The three major interrelated variables and their interactions that comprised the bi-polar and multi-polar dimensions of the NWS were:

Variable	Dimension
A. Work Gratification	a. Satisfaction b. Dissatisfaction
B. Work Needs	c. Material d. Activity e. Self-esteem f. Esteem by others g. Creativity
C. Focus	h. On self i. On (significant) others

Having proposed a general theory of work derived from general statements about work made by writers and from his own experience, Neff (after Stephenson 1953) organised the foregoing variables into a Fisherian balanced block design. The purpose of this design was to define the theoretical behavioural domain of the meaning of work and to provide a framework for the generation of the statements that comprise the NWS (figure 1).

The number of cells in the balanced block design was 20 (2 x 5 x 2). The statements about work generated from this model were constructed symetrically as follows:

Variable A: 30 statements to express work satisfactions.
30 statements to express work dissatisfactions.

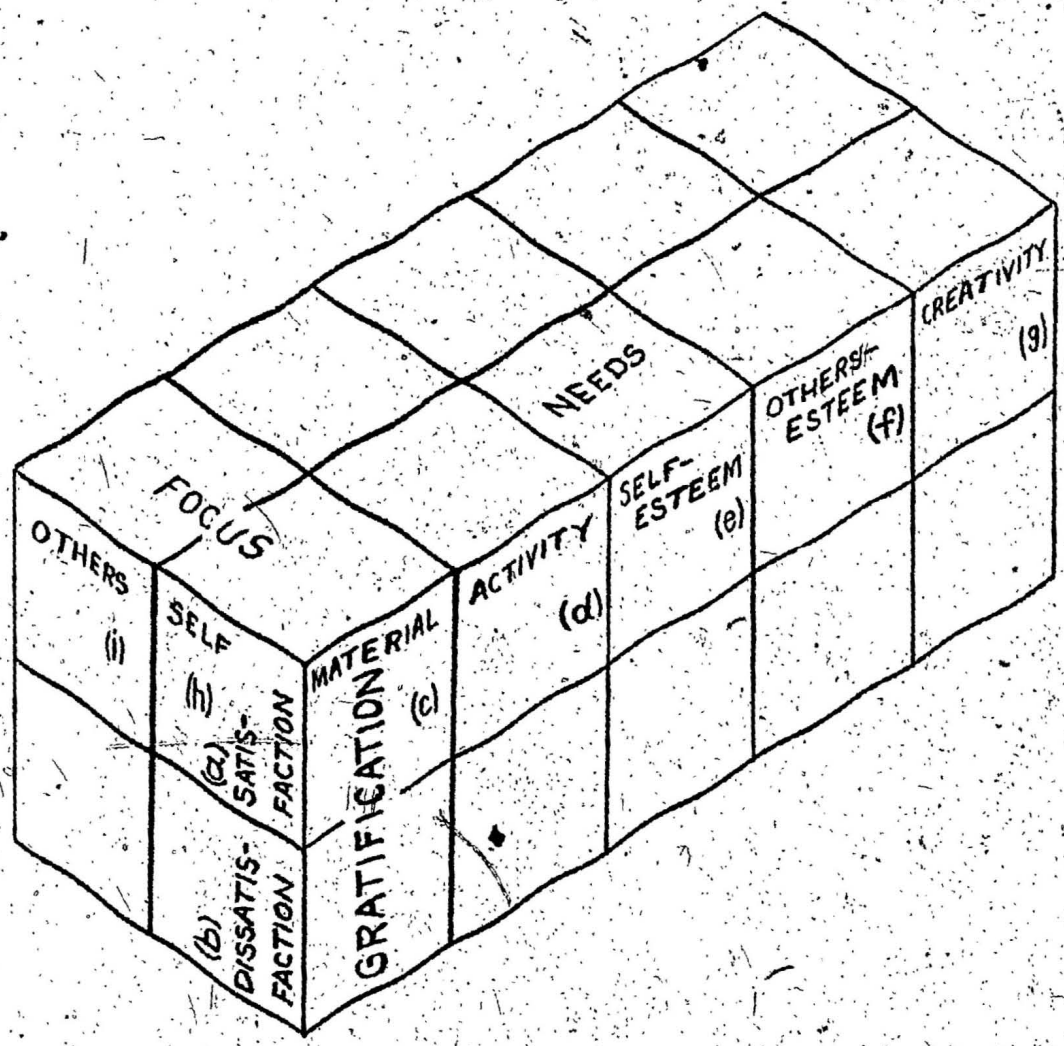

Figure 1. Theory of work: balanced block design for generation of Neff Work Sort items. (After Neff et al., 1963; Rose, 1971).

Variable B: 12 statements expressing each of the five work needs, further subdivided so that 6 are on the positive side and 6 are on the negative side of each continuum.

Variable C: 30 statements which focus on the self, fifteen positive and fifteen negative.
30 statements which focus on significant others, fifteen positive and fifteen negative.

Three statements were constructed for each cell in the matrix to give a replication of three items per cell, yielding a final Q-sort of 60 statements (see Appendix B).

Thus, each cell in the matrix may be described by three variables, one dimension at a time for example:

Cell	Statement
ach	20. Without the money you get from working, there wouldn't be much to make life worthwhile.
	30. The important thing about working is the pay.
	2. If you don't work, there may be no money to take care of you when you're old.
aci	28. With the money you get from working, you can help support those dear to you.
	21. If you have a job you can raise a family.
	42. The money you get from working enables you to do things for people.

Each of the sixty statements that comprise the NWS would therefore simultaneously imply three meanings about work. These meanings of work as defined by the nature of the matrix were (a) work is either satisfying or dissatisfying, (b) identifies the particular need that work meets and (c) the focus of work is on self or other.

Development and Empirical Investigation of the Neff Work Sort

Neff and Helfand (1963) as part of their description of the NWS stated that "the various methods devised to test the reliability and validity of tests or rating scales are not easily applied to Q-sorts..." (p. 141).

As these researchers pointed out if test-retest reliability is thought to be important it may not be possible to use this method to determine reliability. If a subject or group of subjects yielded a different sort on successive occasions it may be possible to conclude that the instrument is unreliable or that the subject has changed his perception of the meaning of work.

In order to assess the construct validity and internal consistency of the sixty items that comprise the NWS two investigations were undertaken by Neff and Helfand.

Firstly, five professionally trained vocational guidance counselors were asked to sort the sixty statements in the way they would expect an "average, well adjusted male worker" would describe himself. The counselors' arrays were subjected to statistical analysis. The replication variance of the counselors' sorts was found to be satisfactorily low. This result was seen as indicating a satisfactory construct validity and internal consistency for the NWS.

A further investigation by Neff and Helfand was undertaken to examine the intercorrelation of the meaning of work held by sixteen handicapped clients, following a three-week period of work potential evaluation, and the

model profile derived from the counselors' sorts.

On the basis of an evaluation made on each client after the three-week period the clients were divided into two groups. These groups were (a) successful rehabilitees and (b) unsuccessful rehabilitees.

Comparison of the sorts of these two groups was made with the "average well adjusted male worker" profile as derived from the counselors' sorts. These comparisons indicated (a) a close correspondence existed between the profiles of the clients evaluated as having a good potential for work and the counselors' sorts while (b) these clients judged to have a poor potential for work were dissimilar.

Neff and Helfand (1963) concluded that it had been possible to construct an ipsative Q-sort that discriminated the meaning of work between and within the groups used in this study.

Neff and Cohen (1967) as part of a study to develop an empirical method for the analysis of Q-sort arrays reported that data obtained from fifty-eight clients tested with the NWS indicated that all but a few were responsive to the satisfaction-dissarisfaction dimension of the instrument, Variable A. The proportions of clients who were significantly discriminating the variables of needs and interpersonal focus, Variables B and C, were not as high but were significantly greater than chance expectation.

As cited by Kauf (1969), although no evidence was elicited from Neff and Cohen's study on the construction of

the variables that comprise the NWS as originally suggested by Neff, inverse factor analysis (Q-technique) had yielded six distinguishable groupings of people as differentiated by their perception of work.

Rose (1971) reported that the NWS was able, to an extent, to distinguish the meanings ascribed to work by samples of successful and unsuccessful students, teachers and counselors in post-secondary vocational institutions. Further, this researcher reported that item clusters of unique needs from analysis of group data were to be observed for each group in the study.

Procedure for Administering The Neff Work Sort

Every one of the sixty items was typed on a 3" x 5" card to make a sort of sixty cards. Every card was identifued by a number from 1 to 60 for the purpose of the subject recording the data. The cards were numbered according to the sample instrument provided by Dr. Neff to the investigator. These numbers did not bear a relationship to the statement on every card.

The basic data was obtained by asking the subject to sort the sixty items into nine piles according to the procedure given on the instruction sheet (see Appendix C). The sorting steps were numbered from 1 to 9 on the record sheet (see Appendix C). Every step had the forced frequency of items as follows:

Sorting Steps	1	2	3	4	5	6	7	8	9
Forced Frequencies	2	3	6	11	16	11	6	3	2

Thus, the form of the forced choice distribution was in the form of a quasi-normal curve. Step 1 involved the items that the subject felt were most characteristic of the way the subject perceived the meaning of work: Step 9 included the items that the subject felt were least characteristic of his or her perception of work. Thus the cards were ranked as a continuum from most characteristic to least characteristic.

As the subject followed the sorting procedure outlined on the instruction sheet, the number of every card was recorded on the appropriate column on the record sheet.

V. Methodology

Permission for the Study

After determining suitable population samples the investigator during February 1979 sought permission in person from the superintendents of all school boards whose schools and students were likely to become involved in this study. At the time of a visit a letter (see Appendix A) outlining the nature, purpose and sample requirements of the study, together with sample instrument items was given to every superintendent or his representative.

It was noted by the researcher that superintendents were particularly interested in the nature of the test instrument items used in this study from the point of view of the type of information these items would elicit from students.

The school boards where students were involved in this study were (a) Roman Catholic School Board, St. John's, (b) Conception Bay South Integrated School Board, Manuels, (c) St. Mary's Roman Catholic School Board, Placentia, (d) Roman Catholic School Board for the Burin Peninsula, Burin, and the (e) Burin Peninsula Integrated School Board, Salt Pond.

In some instances the superintendent required the researcher to contact the principals of the schools directly to seek permission to conduct this study. A visit was made by the investigator to every one of these principals in turn to explain the nature, purpose and methodology of the study. Where it was not possible to make such a preparatory visit to a school directly because of distance and time limitations, every principal was contacted by telephone and follow up letter. This letter (see Appendix A) gave details of the study.

When every principal was contacted to obtain permission to carry out the study, the investigator requested that the purpose of the study be kept from school staff and students in order to avoid compromising or biasing the data.

Structure of Samples and Collection of Data

Data were collected from schools involved in this study as follows:

Program	Date of Data Collection
1. Grade Eight Baseline samples	
(a) Foxtrap J.H.S. 20 males; 20 females	27 February, 1979
(b) Holy Spirit School, Manuels 20 males; 20 females	2 March, 1979
(c) Most Holy Rosary Elementary, Freshwater 19 males*; 12 females*	5 March, 1979
(d) St. Peters Elementary Jerseyside 8 males*; 12 females*	13 March, 1979
2. Pre-vocational samples	
(a) Laval H.S., Placentia	13 March, 1979
Grade Nine - 15 males; 15 females	
Grade Ten - 15 males; 15 females	
Grade Eleven - 15 males; 15 females	
(b) Queen Elizabeth Regional H.S., Foxtrap	16 March, 1979
Grade Nine - 15 males; 15 females	
Grade Ten - 15 males; 15 females	
Grade Eleven - 15 males; 15 females	
(c) Holy Spirit School, Manuels	
Grade Nine - 20 males; 20 females	11 April, 1979
Grade Ten - 15 males; 15 females	12 April, 1979
Grade Eleven - 15 males; 15 females	12 April, 1979

*Total Population

Program	Date of Data Collection
3. Academic samples	
(a) Enright Memorial H.S., Salmonier Grade Nine - 15 males*; 20 females* Grade Ten - 11 males*; 7 females* Grade Eleven - 9 males*; 9 females*	6 March, 1979
(b) Central High School, Mount Carmel Grade Nine - 10 males*; 14 females* Grade Ten - 10 males*; 8 females* Grade Eleven - 14 males*; 13 females*	7 March, 1979
4. Industrial Arts - Home Economics	
(a) Partanna Academy, Grand Bank Grade Nine - 15 males*; 15 females* Grade Ten - 17 males*; 9 females* Grade Eleven - 9 males*; 13 females*	19 March, 1979
(c) Central High School, Marystown Grade Eight - 20 males; 20 females Grade Nine - 15 males; 15 females Grade Ten - 15 males; 15 females Grade Eleven - 15 males; 15 females	20 March, 1979

*Total Population

Q-methodology has not specifically required that random selection be used to select subjects for a particular group being studied. The criterion for a subject to be included in a group was simply that the individual have the characteristics of the group being studied. Therefore, in order for a student to be included was simply that he or she be a member of one of the curricula environments being examined in this study.

However, in order to achieve sample sizes of 40 subjects at the grade eight level and 30 subjects at the grade nine, ten and eleven levels, a random selection of students was made where sufficient numbers of students were available in order to avoid any intra-group bias.

Where possible, class lists were collected beforehand. Statistical random tables were used to determine sample membership. In the case of the Partanna Academy and the John Burke Regional High School, a set of statistical random tables and instructions were sent to the principal, who then determined the sample membership.

When the number of subjects in every sample did not equal either 40 at the grade eight level or 30 at the grade nine, ten and eleven levels, the total population was used to provide the sample.

VI. Trial Collection of Data

As a result of the research done by the investigator on the previous use of the Neff Work Sort, it was determined

that this instrument had been used by previous researchers with comparatively small groups of individuals.

Since up to forty students would be sorting out the sixty items that comprised the NWS during a session that would be likely limited by the school timetable, a trial collection of data was made with forty students at the grade eight level at the Foxtrap Junior High School on 27th February 1979. The purposes of this trial were to discover (a) any problems the students might have in following the sorting instructions and (b) to determine the time required for the students to complete the sort and record their responses.

Aids in Collection of Data

Three aids (see Appendix C) were used to help obtain data. These aids were (a) an instruction sheet giving sorting instructions, (b) a record sheet for recording responses and (c) a wall chart (Figure 2).

The purpose of the wall chart was to illustrate on a small scale the sorting procedure that would be followed by students with the sixty item sort. This wall chart helped to explain the meaning of "most characteristic" and "least characteristic"; sixteen wrist-watches of different designs which were randomly ordered and numbered were shown on the chart. A sixteen cell forced choice array similar to that on the record sheet showed how the number of each wrist-watch would be recorded in a box on the response array.

Procedure for Collection of Trial Data

The procedure outlined as follows was used by the investigator to collect data:

1. The investigator introduced himself. He explained the purpose of the study was to find out what students in school thought about work. Since all students would eventually leave school and eventually work in a job the investigator would like to find out what work meant to students.
2. The investigator explained that each student would be sorting out sixty statements that said different things about work. Reference was made that the student would not be identified, and that there were no right or wrong "answers".
3. The investigator referred to the wall chart to explain the meaning of the terms "most characteristic" and "least characteristic".

   Students were asked in turn to select a wrist-watch shown on the chart that was "most characteristic and/or least characteristic of them". It was explained that they would be doing a similar sorting procedure with the statements about work given on everyone of the sixty cards.
4. The investigator asked the students to complete the personal data boxes required on the record sheet. Personal data required of every student were (a) sex of student, (b) age of student in

years and (c) grade level.

5. Students were then asked to sort out the cards according to the sorting instructions given on the instruction sheet.

No apparent problems were encountered by the students in sorting the items. Some data were lost as a result of duplication of numbers on the record sheet or missing numbers.

Since the procedure used in the trial collection of data was judged by the investigator to be successful, this procedure was used to collect data from the remaining samples in this study.

VII. Processing of the Data

Since Q-methodology has been viewed as a sophisticated method of rank ordering items (Kerlinger, 1973), the following methods were used for the statistical analysis.

1. Kendall's coefficient of concordance, W, (Ferguson, 1976, pp. 373-376) was used to provide measures of agreement on the ranking of NWS items made by males and by females independently for every grade level within a curriculum environment.

The coefficient, W, and Kendall's tau (Glass and Stanley, 1970, p. 176) were used to provide measures of agreement as the sex variable, the average ranking of NWS items between males and females, for every grade level within a curriculum environment.

2. Kendall's tau was used to provide measures of agreement on the ranking of the average cell scores between males and females for each grade level within a curriculum environment.

3. Kendall's coefficient of concordance, W, was used to provide a measure of agreement on the average ranking of NWS items made by males and by females (a) between the grade levels within a curriculum environment and (b) for every grade level between curricula environments.

Tests for significance for the coefficient of concordance W and Kendall's tau were made with chi-square tests with (a) 59 degrees of freedom for items and (b) 19 degrees of freedom for cells at the five percent level.

4. The Pearson correlation coefficient (Glass and Stanley, 1970, pp. 109-119), was used to provide descriptive measures of relationship referenced to the main pre-vocational sample, for each sex at every grade level between curricula environments.

Tests of significance at the five percent level were made with a t-test with 18 degrees of freedom. (Glass and Stanley, 1970, p. 310).

CHAPTER IV

ANALYSIS OF DATA AND PRESENTATION OF FINDINGS

I. Introduction

The purpose of this study was to investigate the extent of the variation in the meaning attached to work by high school students exposed to different curricula environments.

These curricula environments were (a) pre-vocational, (b) industrial arts and home economics and (c) academic programs at the grade nine, ten and eleven levels. Data were also collected from the grade eight level to provide baseline data for the study.

The purpose of this chapter has been to (a) describe the procedures for data processing (b) delineate the sample structure used to provide data, (c) restate the hypotheses, (d) present the results of statistical analysis, (e) interpret the statistical and descriptive data and (f) present a summary of results.

Tests for significance were set a priori at the five percent level.

II. Data Handling

Data from all subject record cards (response arrays) were coded and punched on IBM cards for statistical analysis.

Data were collected from three hundred and ninety-two males and three hundred and ninety-seven females.

A computer program was run to identify those response arrays with duplicate or missing items. Response arrays with up to two errors were checked against the original data and where possible coding errors were corrected. Those response arrays that remained with errors and missing items were not used for statistical analysis.

A total of six hundred and sixty-two response arrays were found to be useable, three hundred and thirty-one produced by males and an equal number produced by females. Since the loss of data was spread in a relatively even manner across samples, no attempt was made to adjust sample sizes for statistical purposes.

III. Sample Structure for Statistical Analysis

In order to reduce the statistical comparisons and correlations to a manageable number, samples from common curricula environments were combined. For example, since high school students from Holy Spirit School, Manuels and Queen Elizabeth Regional High School participated in the same pre-vocational program at Conception Bay South District Vocational School, these samples were combined to form the main pre-vocational sample.

The combination of samples was not judged by the investigator to be a source of invalidation in this study.

The structure of samples for statistical analysis

was as follows:

1. Main pre-vocational sample (decision making), and associated grade eight baseline sample.

   (a) Foxtrap J.H.S. and Holy Spirit School, Manuels.

Grade eight level	35 males; 31 females

   (b) Holy Spirit School, Manuels and Queen Elizabeth R.H.S.

Grade nine level	27 males; 31 females
Grade ten level	26 males; 26 females
Grade eleven level	25 males; 25 females

2. Comparison pre-vocational sample (decision making), and associated grade eight baseline sample.

   (a) Most Holy Rosary Elementary School, Freshwater, and St. Peter's Elementary School, Jerseyside.

Grade eight level	24 males; 20 females

   (b) Laval High School, Placentia

Grade nine level	10 males; 8 females
Grade ten level	15 males; 9 females
Grade eleven level	12 males; 13 females

3. Industrial arts and home economics (exploratory).

   Partanna Academy and John Burke R.H.S., Grand Bank; Central High School, Marystown.

Grade eight level	33 males; 38 females
Grade nine level	22 males; 25 females
Grade ten level	29 males; 21 females
Grade eleven level	20 males; 24 females

4. Control academic program.

   Enright Memorial High School, Salmonier and Central High School, Mount Carmel.

Grade nine level	21 males; 29 females
Grade ten level	16 males; 13 females
Grade eleven level	19 males; 18 females

IV. Restatement and Testing of Hypotheses

1. Hypotheses

This set of hypotheses stated:

There is no significant difference in the perceived meaning of work between:

1:1 males and females within the same grade level of a pre-vocational curriculum environment.

1:2 males and females within the same grade level of an industrial arts - home economics curriculum environment.

1:3 males and females within the same grade level of an academic curriculum environment.

In order to test this set of hypotheses it was first necessary to determine the measure of agreement on the ranking of the sixty NWS items made by males and by females independently within the same curriculum environment and same grade level.

The measure of agreement in the ranking of the sixty NWS items was determined by Kendall's coefficient of concordance (W), tested for significance at the five percent level by a X^2 test with fifty-nine degrees of freedom and a critical value of 77.93.

Sample by sample consideration of these data has been given in Tables 1 to 4. A complete record of the average ranking of sixty items made by males and made by females has been given in Appendix D, Tables 22 through 27.

Table 1

Main Pre-Vocational Samples and Associated Grade Eight Baseline Sample: Measures of Concordance for Ranking of NWS Items

Grade	Sex and Sample Size		W	X^2
8	Male	n = 35	0.252	520.5
	Female	n = 31	0.437	799.5
9	Male	n = 27	0.392	625.0
	Female	n = 31	0.447	817.7
10	Male	n = 26	0.468	717.6
	Female	n = 26	0.549	842.9
11	Male	n = 25	0.433	639.1
	Female	n = 25	0.628	925.8

Table 2

Comparison Pre-Vocational Samples and Associated Grade Eight Baseline Sample: Measures of Concordance for Ranking of NWS Items

Grade	Sex and Sample Size		W	X^2
8	Male	n = 24	0.374	530.2
	Female	n = 20	0.537	634.1
9	Male	n = 10	0.481	266.1
	Female	n = 8	0.507	239.5
10	Male	n = 12	0.448	316.9
	Female	n = 9	0.474	251.9
11	Male	n = 12	0.577	408.6
	Female	n = 13	0.557	425.4

Table 3

Industrial Arts - Home Economics Samples: Measures of Concordance for Ranking of NWS Items

Grade	Sex and Sample Size		W	X^2
8	Male	n = 33	0.290	563.7
	Female	n = 38	0.448	1004.4
9	Male	n = 22	0.422	548.3
	Female	n = 25	0.432	637.6
10	Male	n = 29	0.276	472.5
	Female	n = 21	0.408	505.5
11	Male	n = 20	0.409	483.1
	Female	n = 24	0.573	811.4

Table 4

Control Academic Samples: Measures of Concordance for Ranking of NWS Items

Grade	Sex and Sample Size		W	X^2
9	Male	n = 21	0.285	353.7
	Female	n = 29	0.497	849.6
10	Male	n = 16	0.217	205.1
	Female	n = 13	0.405	310.7
11	Male	n = 19	0.444	497.2
	Female	n = 18	0.517	548.7

These data enabled the following statements to be made:

1. There was no significant difference in the perceived meaning of work between males within the same grade level of the pre-vocational curriculum environment.

2. There was no significant difference in the perceived meaning of work between females within the same grade level of the pre-vocational curriculum environment.

3. There was no significant difference in the perceived meaning of work between males within the same grade level of the industrial arts - home economics curriculum environment.

4. There was no significant difference in the perceived meaning of work between females within the same grade level of the industrial arts - home economics curriculum environment.

5. There was no significant difference in the perceived meaning of work between males within the same grade level of the academic curriculum environment.

6. There was no significant difference in the perceived meaning of work between females within the same grade level of the academic curriculum environment.

In order to test hypotheses 1:1, 1:2 and 1:3 the measure of agreement on the ranking of the sixty NWS items by males and by females was determined by Kendall's Tau, tested for significance at the five percent level.

The test for significance was determined by the formula:

$$Z = \frac{Tau}{\sqrt{2(2N + 5) \div 9N(N - 1)}} \qquad N = 60$$

The critical value for Z at the five percent level was 1.96.

Sample by sample consideration of these data has been given in Tables 5 to 8.

Further tests of hypotheses 1:1, 1:2 and 1:3 were made using Kendall's coefficient of concordance (W) to determine the measure of agreement of the ranking of the sixty NWS items between males and females in the same curriculum environment and grade level. This coefficient was tested for significance at the five percent level by an X^2 test with fifty-nine degrees of freedom and a critical value of 77.93.

Sample by sample consideration of these data has been given in Tables 5 to 8.

Computed values of Z and X^2 exceeded critical values and permitted the following statements to be made with respect to hypotheses 1:1, 1:2 and 1:3.

1. There was no significant difference in the perceived meaning of work between males and females within the same grade level of the pre-vocational curriculum environment.

2. There was no significant difference in the perceived meaning of work between males and females within the same grade level of the industrial arts - home economics curriculum environment.

3. There was no significant difference in the perceived meaning of work between males and females within the same grade level of the academic curriculum environment.

Data from the grade eight baseline level samples, associated with the main and comparison pre-vocational samples, were also tested. The computed values of Z and X^2 shown in Tables 5 and 6 exceeded critical values and

Table 5

Main Pre-Vocational Samples and Associated Grade Eight Baseline Sample: Measures of Concordance for Ranking of NWS Items, between Males and Females

Grade	Sample Size	Tau	W	X^2
8	66	0.68	0.310	1208.5
9	58	0.78	0.407	1392.4
10	52	0.81	0.492	1509.6
11	50	0.80	0.514	1515.3

Table 6

Comparison Pre-Vocational Samples and Associated Grade Eight Baseline Sample: Measures of Concordance for Ranking of NWS Items, between Males and Females

Grade	Sample Size	Tau	W	X^2
8	44	0.74	0.428	1110.1
9	18	0.69	0.450	477.4
10	21	0.70	0.431	533.5
11	25	0.74	0.539	794.7

Table 7

Industrial Arts - Home Economics Samples: Measures of Concordance for Ranking of NWS Items, between Males and Females

Grade	Sample Size	Tau	W	X^2
8	71	0.82	0.361	1512.4
9	47	0.79	0.417	1155.2
10	50	0.73	0.313	922.8
11	44	0.80	0.484	1257.8

Table 8

Control Academic Samples: Measures of Concordance for Ranking of NWS Items, between Males and Females

Grade	Sample Size	Tau	W	X^2
9	50	0.75	0.384	1131.7
10	29	0.67	0.273	467.3
11	37	0.77	0.460	1004.4

permitted the following statement to be made:

> There was no significant difference in the perceived meaning of work between males and females within the grade eight baseline level samples associated with the main and comparison pre-vocational samples.

Measurement of agreement of average cell scores

As the sixty NWS items comprised a balanced block design with a replication of three items per cell, further tests of hypotheses 1:1, 1:2 and 1:3 were made to determine if the average scores for each cell in the balanced block design could be used as a comparative measure.

The measure of agreement of average cell scores made by males as compared to the average cell scores made by females was determined by Kendall's Tau. The test for significance at the five percent level was determined by the formula:

$$Z = \frac{\text{Tau}}{\sqrt{2(2N + 5) + 9N(N - 1)}} \qquad N = 20$$

Sample by sample consideration of these data has been given in Tables 9 to 12. For comparative purposes the tau for the measurement of agreement on the ranking of the sixty items has been included.

All values of Z were greater than the 1.96 value required for significance at the five percent level.

A complete record of the ranking of the average cell scores made by males and by females in the study samples has been given in Appendix D, Tables 28 through 33.

Table 9

Main Pre-Vocational Samples and Associated Grade Eight Baseline Sample: Measures of Agreement for Average Cell Scores, between Males and Females

Grade	Tau-items	Tau-cells
8	0.68	0.66
9	0.78	0.82
10	0.81	0.82
11	0.81	0.87

Table 10

Comparative Pre-Vocational Samples and Associated Grade Eight Baseline Sample: Measures of Agreement for Average Cell Scores, between Males and Females

Grade	Tau-items	Tau-cells
8	0.74	0.72
9	0.69	0.85
10	0.70	0.81
11	0.74	0.80

Table 11

Industrial Arts - Home Economics Samples: Measures of Agreement for Average Cell Scores, between Males and Females

Grade	Tau-items	Tau-cells
8	0.82	0.81
9	0.79	0.81
10	0.73	0.76
11	0.80	0.89

Table 12

Control Academic Samples: Measures of Agreement for Average Cell Scores, between Males and Females

Grade	Tau-items	Tau-cells
9	0.75	0.76
10	0.67	0.80
11	0.77	0.86

The relatively consistent manner in which the cells that structured the balanced block-design were scored, by both males and by females, would seem to suggest a measure of internal consistency in the structuring of the items that comprised balanced block design.

These data permitted the following statement to be made with respect to hypotheses 1:1, 1:2 and 1:3.

> There was no significant difference in the perceived meaning of work between males and females within the same grade level and in the same curriculum environment.

2. Hypotheses

This set of hypotheses stated:

There is no significant difference in the perceived meaning of work in a pre-vocational curriculum environment held by:

2:1 males and females in different grade levels.

2:2 males in different grade levels.

2:3 females in different grade levels.

Since no statistical difference was determined in the manner in which males and females within the same grade level of the pre-vocational curriculum environment ranked the sixty NWS items, hypotheses 2:2 and 2:3 were not tested.

Hypothesis 2:1. The measure of agreement in the ranking of the sixty NWS items by males and by females in the main pre-vocational sample and associated grade eight baseline sample, was determined with Kendall's coefficient of concordance (W), tested for significance at the five percent level by an X^2 test with fifty-nine degrees of freedom and a critical value of 77.93.

Data for the main and comparative pre-vocational samples and their associated grade eight baseline samples have been given in Table 13.

Table 13

Main and Comparison Pre-Vocational Samples and Associated Grade Eight Baseline Samples: Measure of Concordance Between Grade Levels for Ranking of NWS Items, Both Sexes.

Sample	W	X^2
Main Sample	0.98	230.37
Comparison Sample	0.95	224.43

These data permitted the following statements to be made with respect to hypothesis 2:1.

1. There was no significant difference in the perceived meaning of work held by males and females in different grade levels of the main pre-vocational curriculum environment and the associated grade eight baseline sample.

2. There was no significant difference in the perceived meaning of work held by males and females in different grade levels of the comparison pre-vocational curriculum environment and the associated grade eight baseline sample.

A complete record of the average ranking of the sixty NWS items made by both sexes in the pre-vocational samples has been given in Appendix D, Table 34 and Table 35.

Descriptive data from item rankings. In order to provide descriptive data from the ranking of the sixty NWS items, the ranking of the eleven most characteristic items and the eleven least characteristic items, together with

their associated cells, has been given in Tables 14 and 15, and in Appendix E, Tables 38 through 45.

Since subjects were required to sort items perceived as most characteristic and least characteristic in a forced choice distribution, subjects might appear to be more certain of those items placed in either tail of the quasi-normal curve.

The investigator has interpreted these data later in this chapter.

3. Hypotheses

This set of hypotheses stated:

There is no significant difference in the perceived meaning of work in an industrial arts - home economics curriculum environment held by:

3:1 males and females in different grade levels.

3:2 males in different grade levels.

3:3 females in different grade levels.

Since no statistical difference was determined in the manner in which males and females within the same grade level of an industrial arts - home economics curriculum environment and grade level ranked the sixty NWS items, hypotheses 3:2 and 3:3 were not tested.

Hypothesis 3:1. The measure of agreement in the ranking of the sixty NWS items by males and by females in the industrial arts - home economics sample was determined with Kendall's coefficient of concordance (W), tested for significance at the five percent level by an X^2 test with

Table 14

Grade Eight Baseline Data and Pre-Vocational Main Samples, Both Sexes

Ranking of the Eleven Most Characteristic Items

Grade Eight Baseline Data

Grade Level	Highest Mean Score							Lowest Mean Score			
8	19 aei	36 aei	54 afi	28 aci	24 agh	26 afh	14 adh	41 adi	23 agi	17 aeh	22 adi

Pre-Vocational (Decision Making)

9	19 aei	26 afh	52 agh	17 aeh	24 agh	36 aei	41 adi	23 agi	54 afi	31 afi	28 aci
10	54 afi	41 adi	19 aei	24 agh	31 afi	26 afh	52 agh	17 aeh	36 aei	23 agi	28 aci
11	19 aei	41 adi	24 agh	17 aeh	54 agh	54 afi	31 afi	36 aei	23 agi	28 aci	39 aeh

Table 14 (cont'd)

Grade Eight Baseline Data and Pre-Vocational Main Samples, Both Sexes

Ranking of the Eleven Least Characteristic Items

Grade Eight Baseline Data

Grade Level	Lowest Mean Score							Highest Mean Score			
8	3 bei	58 bdh	35 bdi	27 bei	37 beh	56 beh	46 bgh	8 bfh	48 bgh	40 bei	33 bfi

Pre-Vocational (Decision Making)

9	58 bdh	46 bgh	48 bgh	56 beh	27 bei	3 bei	35 bdi	37 beh	40 bei	8 bfh	33 bfi
10	58 bdh	27 bei	56 beh	48 bgh	46 bgh	37 beh	32 bfh	3 bei	8 bfh	35 bdi	40 bei
11	58 bdh	46 bgh	48 bgh	3 bei	37 beh	27 bei	56 beh	18 bgi	40 bei	8 bfh	35 bdi

Table 15

Grade Eight Baseline Data and Pre-Vocational Comparison Samples, Both Sexes

Ranking of the Eleven Most Characteristic Items

Grade Eight Baseline Data

Grade Level	Highest Mean Score							Lowest Mean Score			
8	31 afi	52 agh	19 aei	28 aci	17 aeh	26 afh	24 agh	41 adi	36 aei	54 afi	45 agi

Pre-Vocational (Decision Making)

9	17 aeh	19 aei	31 afi	54 afi	41 adi	36 aei	23 agi	24 agh	52 agh	14 adh	28 aci
10	19 aei	54 afi	52 agh	41 adi	17 aeh	36 aei	31 afi	45 agi	28 aci	24 agh	23 agi
11	19 aei	24 agh	17 aeh	28 aci	41 adi	54 afi	38 agh	31 afi	52 agh	39 aeh	36 aei

Table 15 (cont'd)

Grade Eight Baseline Data and Pre-Vocational Comparison Samples, Both Sexes

Ranking of the Eleven Least Characteristic Items

Grade Eight Baseline Data

Grade Level	Lowest Mean Score							Highest Mean Score			
8	58 bdh	27 bei	48 bgh	3 bei	35 bdi	56 beh	46 bgh	34 bch	37 beh	29 bgh	8 bfh

Pre-Vocational (Decision Making)

9	48 bgh	27 bei	58 bdh	56 beh	3 bei	37 beh	60 beh	46 bgh	47 bgi	18 bgi	34 bch
10	48 bgh	56 beh	3 bei	58 bdh	37 beh	29 bgh	35 bdi	46 bgh	8 bfh	40 bei	16 bdh
11	48 bgh	3 bei	58 bdh	37 beh	27 bei	56 beh	35 bdi	8 bfh	25 bci	46 bgh	40 bei

fifty-nine degrees of freedom and a critical value of 77.93.

Data for this sample have been given in Table 16.

Table 16

Industrial Arts - Home Economics Samples: Measure of Concordance Between Grade Levels for Ranking of NWS Items, Both Sexes.

W	x^2
0.96	226.29

These data permitted the following statement to be made with respect to hypothesis 3:1.

> There was no significant difference in the perceived meaning of work held by males and females in different grade levels of the industrial arts and home economics curriculum environment.

A complete record of the average ranking of the sixty NWS items made by both sexes in this sample has been given in Appendix D, Table 36.

Descriptive data from item rankings. In order to provide a measure of descriptive data from the ranking of the sixty NWS items, the ranking of the eleven most characteristic and eleven least characteristic items has been given in Table 17, and in Appendix E, Tables 46 through 49.

Table 17

Industrial Arts and Home Economics Samples, Both Sexes

Ranking of the Eleven Most Characteristic Items

Grade Level	Highest Mean Score							Lowest Mean Score			
8	17 aeh	54 afi	19 aei	52 agh	36 aei	24 agh	26 afh	41 adh	31 afi	23 agi	28 aci
9	36 aei	19 aei	52 agh	54 afi	31 afi	17 aeh	45 agi	41 adi	24 agh	23 agi	26 afh
10	19 aei	54 agi	31 agi	28 aci	23 agi	41 adi	36 aei	52 agh	17 aeh	24 agh	14 adh
11	19 aei	41 adi	26 afh	17 aeh	24 agh	36 aei	54 afi	52 agh	31 afi	45 agi	39 aeh

Table 17 (cont'd)

Industrial Arts and Home Economics Samples, Both Sexes

Ranking of the Eleven Least Characteristic Items

Grade Level	Lowest Mean Score							Highest Mean Score			
8	58 bdh	3 bei	56 beh	35 bdi	27 bei	37 beh	48 bgh	8 bfh	51 bci	34 bch	16 bdh
9	58 bdh	27 bei	56 beh	48 bgh	37 beh	3 bei	34 bch	35 bdi	32 bfh	51 bci	46 bgh
10	3 bei	58 bdh	56 beh	37 beh	8 bfh	35 bdi	46 bgh	27 bei	48 bgh	18 bgi	47 bgi
11	46 bgh	48 bgh	58 bdh	3 bei	27 bei	56 beh	8 bfh	37 beh	40 bei	35 bdi	18 bgi

The investigator has interpreted these data later in this chapter.

4. Hypotheses

This set of hypotheses stated:

There is no significant difference in the perceived meaning of work in an academic curriculum environment held by:

4:1 males and females in different grade levels.

4:2 males in different grade levels.

4:3 females in different grade levels.

Since no statistical difference was determined in the manner in which males and females within the same grade level of an academic curriculum environment ranked the sixty NWS items, hypotheses 4:2 and 4:3 were not tested.

Hypothesis 4:1. The measure of agreement in the ranking of the sixty NWS items by males and by females in the academic sample was determined with Kendall's coefficient of concordance (W), tested for significance at the five percent level by an X^2 test with fifty-nine degrees of freedom and a critical value of 77.93.

Data for this sample have been given in Table 18.

Table 18

Control Academic Samples: Measure of Concordance Between Grade Levels for Ranking of NWS Items, Both Sexes.

W	X^2
0.96	170.54

These data permitted the following statement to be made with respect to hypothesis 4:1.

> There was no significant difference in the perceived meaning of work held by males and females in different grade levels of the academic curriculum environment.

A complete record of the average ranking of the sixty NWS items made by both sexes in this sample has been given in Appendix D, Table 37.

Descriptive data from item rankings. In order to provide a measure of descriptive data from the ranking of the sixty NWS items, the ranking of the eleven most characteristic and eleven least characteristic items has been given in Table 19, and in Appendix E, Tables 50 through 52.

The investigator has interpreted these data later in the chapter.

5. Hypotheses

This set of hypotheses stated:

There is no difference in the perceived meaning of work held by:

5:1 males and females in the same grade level of pre-vocational, industrial arts - home economics and academic curricula environments.

5:2 males in the same grade level of pre-vocational, industrial arts - home economics and academic curricula environments.

5:3 females in the same grade level of pre-vocational industrial arts - home economics and academic curricula environments.

Table 19

Academic Samples, Both Sexes

Ranking of the Eleven Most Characteristic Items

Grade Level	Highest Mean Score							Lowest Mean Score			
9	19 aei	52 agh	24 agh	54 afi	23 agi	31 afi	41 adi	28 aci	17 aeh	38 agh	26 afh
10	52 agh	19 aei	17 aeh	23 agi	54 afi	31 afi	24 agh	14 adh	36 aei	50 bci	42 aci
11	24 agh	17 aeh	19 aei	54 afi	52 agh	38 agh	41 adi	28 aci	23 agi	12 afh	45 agi

Table 19 (cont'd)

Academic Samples, Both Sexes

Ranking of the Eleven Least Characteristic Items

Grade Level	Lowest Mean Score							Highest Mean Score			
9	37 beh	58 bdh	48 bgh	3 bei	46 bgh	8 bfh	27 bei	56 beh	35 bdi	34 bch	25 bci
10	27 bei	37 beh	46 bgh	8 bfh	58 bdh	56 beh	48 bgh	3 bei	35 bdi	40 bei	53 bch
11	58 bdh	37 beh	48 bgh	27 bei	56 beh	46 bgh	3 bei	8 bfh	25 bei	40 bei	51 bci

Hypothesis 5:1. The measure of agreement in the ranking of the sixty NWS items by both sexes in the same grade level and different curriculum environments was determined with Kendall's coefficient of concordance (W), tested for significance at the five percent level by an X^2 test with fifty-nine degrees of freedom and a critical value of 77.93.

Data for the measure of agreement between students of both sexes in the same grade level but different curriculum environment have been given in Table 20.

Table 20

Measure of Concordance Between Curricula Environments for Both Sexes.

Grade Level	W	X^2
8	0.98	172.93
9	0.97	228.04
10	0.95	224.68
11	0.96	227.14

These data permitted the following statement to be made with respect to hypothesis 5:1.

> There was no significant difference in the perceived meaning of work held by males and females in the same grade level of different curriculum environments.

Hypotheses 5:2 and 5:3. While statistical analysis did not determine any significant difference in the perception of work according to the ranking of sixty NWS items made by males with those rankings made by females, because of the focus of this study on the pre-vocational curriculum some measure of comparison along the sex variable was thought to be necessary.

Thus, in order to test hypotheses 5:2 and 5:3 correlations of the average cell scores made by males and the average cell scores made by females were made with reference to the main pre-vocational sample. These correlations were tested for significance with the Pearson Correlation Coefficient, tested for significance at the five percent level by a t-test with eighteen degrees of freedom and a critical value of 1.734.

Data for these correlations have been given in Table 21.

A complete record of the average cell scores made by males and by females has been given in Appendix D, Tables 28 through 33.

These data permitted the following statments to be made:

1. There was no significant difference in the perception of work held by males in the same grade level of different curriculum environments.

2. There was no significant difference in the perception of work held by females in the same grade level of different curriculum environments.

Table 21

Correlation of Average Cell Scores with Main Pre-Vocational Sample and other Curricula Environments for Males and Females

Grade Level and Sex		Main Pre-Vocational Sample	Comparison Pre-Vocational Sample	Industrial Arts and Home Economics	Control Academic Program
9	Male	1.00	0.95	0.96	0.95
	Female	1.00	0.98	0.96	0.96
10	Male	1.00	0.98	0.97	0.92
	Female	1.00	0.97	0.97	0.97
11	Male	1.00	0.96	0.97	0.97
	Female	1.00	0.99	0.98	0.96

V. Interpretation of the Data

The data pertaining to this study have been interpreted by (a) statistical analysis of the ranking of the sixty NWS items together with average cell scores and (b) in descriptive terms based on those NWS items ranked as most characteristic and least characteristic.

Interpretation of Statistical Data

Statistical analysis in terms of measures of concordance and correlation did not produce evidence of significant differences in the perception of work according to the ranking of the sixty NWS items or average cell scores on the variables of sex, grade level or curriculum environment.

Data given in Tables 1 to 4 showed that while all males and all females in a grade level and within a curriculum environment ranked the sixty NWS items in a way that did not indicate statistical difference, the increasing measures of concordance gave slight evidence that a more common agreement on the perception of work may be a function of grade level and sex.

The lowest measures of concordance or agreement were among males at the grade eight level of each curriculum environment and the highest measures were found in the grade eleven level among females in every curriculum environment.

Data given in Tables 5 to 8 showed that in statistical terms males and females in the same grade level within a particular curriculum environment agreed on a common perception

of the meaning of work according to their ranking of the sixty NWS items. Data in Tables 9 to 12 showed a similar agreement by males and females on a common perception of the meaning of work according to their average cell scores (of the cells) in the balanced block design.

Data within curriculum environments and between grade levels

Data given in Tables 13, 16 and 18 showed high measures of agreement in the way males and females in all the grade levels within the curriculum environments perceived the meaning of work according to their ranking of the sixty NWS items.

These data would seem to imply that either (a) the perception of work was not changed as a consequence of students being exposed to sequential grade levels of a particular curriculum environment or (b) any difference in the perception of work may lie on dimensions other than those proposed by Neff's theory of work.

Data between curriculum environments

Having established that a common perception of work was held by males and females within each curriculum environment, according to their ranking of the NWS items, data given in Table 20 showed similar high measures of agreement existed between males and females in the same grade levels across the curricula environments.

These data would seem to imply that the perception of work according to the ranking of the NWS items was common for all subjects irrespective of sex within the limits of the grade levels and curricula environments examined by the investigator.

Interpretation of Descriptive Data

In order to provide a descriptive interpretation of the meaning of work held by pre-vocational students, data were taken from the eleven items ranked as most characteristic and the eleven items ranked as least characteristic. These items were sorted by the subjects into each tail of the quasi-normal forced choice distribution.

Thus, it was reasoned that those items placed in the extremes of the forced choice distribution might represent the subjects' most strongly held positive and negative perceptions about the meaning of work, rather than those items placed in the central portion of the distribution.

Descriptive data for pre-vocational samples

Data given in Tables 14 and 15 and in Appendix E, Tables 38 through 45, showed that both sexes in all grade levels of both pre-vocational samples discriminated between most characteristic and least characteristic items along the dimension of satisfaction/dissatisfaction, cells (a--) and (b--) of the blanaced block design.

Thus in broad terms, students in both pre-vocational samples perceived work positively in terms of satisfaction.

This positive perception of work was associated equally by all grade levels, in terms of most characteristic items and cells, with a focus on "self" (a-h) and "others (a-i). A broad interpretation of this would suggest that some work needs along the dimension of satisfaction result for example with the interaction with other people, for example 54-(afi), "working means that you help others and they help you and 23-(agi), "I find I get all sorts of new ideas from the people I work with."

Item 26-(afh), "the important thing about working is the friends you can make on the job", was perceived as most characteristic by the grade nine and ten levels of the main pre-vocational sample, but was absent from the comparison pre-vocational sample. Since, this is only one item it was difficult to give any interpretation to this difference in ranking between the two pre-vocational samples.

Work satisfaction was also perceived in terms of allowing the individual to be creative 24-(agh), "I find work satisfying because it makes me feel creative" and in terms of allowing the individual to develop new ideas, 52-(agh).

Pre-vocational students would seem to perceive work as fulfilling the need of self-esteem. 17-(aeh), "having a job makes you feel you're worth something". At the grade eleven level item 39-(aeh) "its a bad feeling to be wholly dependent on others" was also associated with 17-(aeh).

The inclusion of 39(aeh) with items ranked as most characteristic at the grade eleven level would seem to suggest that students about to leave school perceive work as a means of achieving independence.

Work in terms of fulfilling the need for activity was indicated by one item ranked as most characteristic 41-(adi), "the big thing about working is that it gets you involved with other people". It would appear logical to suggest students may have interpreted this statement in terms of work being a social activity rather than as a specific job activity.

Only one item associated with material needs was termed as being most characteristic by students in all grade levels of both pre-vocational samples 28-(aci). This would seem to imply that in these particular grade levels, material needs (money) may not be perceived as strongly as needs such as esteem and creativity.

It would seem that throughout the grade nine, ten and eleven levels students perceived work as providing them with the opportunity of being viewed as worthwhile individuals and allowing them to develop and use new ideas.

Whether or not the pre-vocational curriculum content and its structure alters the way a student perceives the meaning of work has not been shown by this study. However, a comparison of the grade eight baseline data and the grade nine level of the pre-vocational program in the main sample showed that at the grade nine level work was now perceived

as providing the opportunity to develop new ideas 52-(agh), and also as a source of new ideas from the people one works with, 23-(agi). However, such a difference may be due to the nature of the samples themselves rather than any changes in perception of work caused by exposure of students to the pre-vocational program at the grade nine level.

At all grade levels in both the main and comparison pre-vocational samples least characteristic items focused on the dimension of dissatisfaction (b--) of the balanced block design.

Thus, a negative interpretation of this data would seem to support the notion that students in the pre-vocational samples perceived work as a source of satisfaction.

This dimension of satisfaction was associated more with items focused on "self" (--h) rather than with items focused on "others" (--i). A broad interpretation of this would seem to imply that work is more characteristically perceived as an involvement with other people.

An examination of the items ranked as least characteristic over the grade nine, ten and eleven levels of the pre-vocational programs would seem to suggest a constancy of items placed in this portion of the distribution. This constancy of items would seem to imply that students in these grade levels appear to be quite certain of what they perceive work "not to be".

A negative interpreation of items 3, 27, 40 - (bei) and 37, 56 - (beh) would seem to suggest that work is

perceived as fulfilling the need of self esteem as focused on "self" and "others". The least characteristic perception of these items would seem to reflect the bi-polar nature of the balanced block design.

Similarly, items 46, 48 - (bgh) and 58 - (bdh), "Work is boring" may be negatively interpreted to suggest that work is perceived by pre-vocational students as providing the opportunity for them to be creative and also as a source of new ideas.

At the grade eleven level of the main pre-vocational sample item 18 - (bgi), "when you work, they make you give up your own ideas", would seem to imply logically that students expect to be allowed to use their own ideas in the work situation. This item was not ranked as most characteristic by the conparison pre-vocational sample at the grade eleven level.

Whether or not this item reflected a special characteristic of the main sample would seem to be an open question.

Thus, in descriptive terms students in both the main and comparison pre-vocational samples tended to perceive the meaning of work positively along the dimension of satisfaction. Work would also seem to be perceived as providing the opportunity to fulfill certain needs. These needs were esteem for self and others, and creativity.

Comparison of Descriptive Data

Data given in Tables 20 and 21 showed that in statistical terms the perception of work according to the ranking of the sixty NWS items and average cell scores by students in industrial arts - home economics and academic samples correlated highly with the perception of work held by pre-vocational students.

However, slight differences existed between the samples studied in the ranking of the eleven most characteristic items and the eleven least characteristic items. Examination of these items given in Tables 17 and 19, and in Appendix E, Tables 46 through 52, showed that at the grade eight level of the industrial arts - home economic sample students included items 31-(afi), 52-(agh) and 45-(agi) among the items ranked as most characteristic. These items were not ranked as most characteristic by the grade eight level associated with the main pre-vocational sample.

Item 52-(agh) "work gives me a chance to develop new ideas" and item 45-(agi), "work is exciting because of the new ideas people have", would seem to suggest that exposure to a broad curriculum that includes industrial arts and home economics at the grade eight level may help students to perceive work in creative terms. However, these two items were also ranked as most characteristic by students in the grade eight level associated with the comparison pre-vocational samples who had not been exposed to any form of vocational exploration.

Thus, it would seem logical to suggest that minor differences in the ranking of items may be caused by the nature of the sample rather than the effect of exposure to a particular type of curriculum. However, item 39-(aeh) "its a bad feeling to be wholly dependent on others" was also perceived as a most characteristic item at the grade eleven level by the industrial arts - home economics sample. This particular item was not ranked with most characteristic items by grade eleven students in the academic sample. If this item suggested an attainment of a degree of vocational maturity by students at the grade eleven level, it may have resulted from exposure to a vocationally oriented pre-vocational curriculum.

Unlike students in the pre-vocational and industrial arts and home economics curricula environments, students at the grade ten level of the academic sample included the item 50-(bci), "I'm not interested in working just because other people want me to", in the eleven items ranked as most characteristic. The investigator has not been able to reach a specific conclusion why this negative item was ranked in such a manner. Whether or not the ranking of the item reflected a particular perception about work that resulted from exposure to an academic curriculum would seem to be an open question.

Items ranked as least characteristic by the industrial arts - home economics and academic samples were on the dimension of dissatisfaction, (b--) and were in close agreement

with those ranked as least characteristic by the pre-vocational samples.

VI. Summary of Results

Statistical analysis showed high measures of agreement in the manner in which students within and between the pre-vocational, industrial arts - home economics and academic curricula environments sorted the sixty item NWS.

High measures of positive correlation between these curricula environments were also obtained for the average cell scores of the balanced block design. Examination of the eleven items perceived as most characteristic and the eleven items perceived as least characteristic, by students within and between the curricula environments, showed little variation between samples in the nature of these items.

These data permitted the following statements to be made as a summary of results:

1. There was no significant variation in the meanings attached to work by males or by females.
2. There was no significant variation in the meanings attached to work by students between the grade levels of any of the curricula environments examined by this study.
3. There was no significant variation in the meanings attached to work by students between the same grade levels in the different curricula environments examined by this study.

4. A common perception of the meanings attached to work was held by students irrespective of sex, grade level and curriculum environment.
5. Students perceived the most characteristic aspects of work in terms of satisfaction associated with an almost equal focus on self or others.
6. Work was perceived most characteristically as providing the opportunity to fulfill the needs of self-esteem, show esteem for others and allow for the expression of creativity and the acquisition of new ideas.
7. Students perceived the least characteristic aspects of work in terms of dissatisfaction with a greater focus on self than others.

   A negative interpretation of this data would seem to imply that work is a source of satisfaction and provides for a source of interaction and affiliation with other people.
8. Work was perceived least characteristically as being without the opportunity to express or develop new ideas.
9. No special emphasis was placed on material or activity needs in the average ranking of the NWS items.

CHAPTER V

SUMMARY, CONCLUSIONS, IMPLICATIONS AND RECOMMENDATIONS

I. Introduction

Findings of research on the subject of pre-vocational education, carried out in this province during the early nineteen seventies, suggested that doubt existed as to what were the actual educational goals and objectives being attained by this type of program provided for high school students within the framework of the district vocational school system.

The purpose of this study was to investigate the meanings attached to work by students in pre-vocational programs. Data were also sought for comparative purposes from students in industrial arts, home economics, and academic programs at the high school level.

Chapter I through IV have in turn presented the nature of the problem, reviewed the related literature, explicated the design and methodology of this study, and presented the findings and summary of results. The purpose of this chapter has been to present the (a) summary of procedures, (b) hypotheses tested, (c) summary of findings, (d) test-retest reliability, (e) conclusions, (f) implications and (g) make recommendations for future research.

II. Summary of Procedures

Structure of Samples

Data for this study were drawn from three curricula environments.

Samples of thirty students were drawn from the grade nine, ten and eleven levels of two pre-vocational programs. Each sample comprised thirty students, fifteen males and fifteen females at every grade level.

Two pre-vocational programs were utilised in order to provide a measure of comparative data and to avoid the possibility of biased results. The main pre-vocational samples comprised students drawn from two high schools whose students attended the pre-vocational program at the District Vocational School Conception Bay South, and the comparative samples comprised students from a single high school. These latter students attended the pre-vocational program at the District Vocational School Placentia.

Additional samples of grade eight level students were drawn to provide baseline data. These students attended feeder schools associated with each of the high schools providing students for pre-vocational programs. Samples at the grade eight baseline level comprised forty students, twenty males and twenty females.

The selection of samples across grade nine, ten and eleven levels within the pre-vocational curriculum environment was done to provide measures of longitudinal data for the study.

Cross-sectional data were provided by similarly structured samples of students in industrial arts and home economics programs. Since the educational objectives of industrial arts and home economics programs are similar to those of the pre-vocational program, it was sought to determine if differences in the nature of the curriculum structure and environment between these types of practical arts programs affected the manner in which the meaning of work was perceived by students. Samples of students in two industrial arts and home economics programs were drawn from three schools, through the grade eight, nine, ten and eleven levels.

Where school populations permitted, the numbers of students in each sample were the same as those in the pre-vocational samples, otherwise total populations were used.

Control data were provided by samples of students drawn from the grade nine, ten and eleven levels of two high schools whose programs were academic in nature. Because of the smaller student populations in these schools total populations were used in every grade level.

Data were obtained from the nine schools involved in this study between the 27th of February and the 12th of April, 1979.

Instrumentation and Q-Technique

A Q-technique developed by Neff (1963) was used to determine the possible variations in the meaning attached to work by subjects in every sample. This instrument

comprised sixty statements about work structured to form a balanced block design. These items were developed from a theory about work proposed by Neff.

Every statement about work was typed on an individual card. Every subject was asked to sort the set of sixty cards in a forced choice manner. The forced choice distribution was in the form of a quasi-normal curve. Every subject recorded his or her responses on an individual record card (response array).

Statistical Analysis

For the purpose of this study samples from both pre-vocational programs were kept separate. However, in order to reduce the number of statistical comparisons, samples from the schools providing industrial arts and home economics programs were combined within grade levels.

Samples from the schools providing academic programs were also combined within grade levels.

The measures of agreement or variation in the meaning of work within grades and between grades within a curriculum environment on the ranking of the sixty NWS items were determined by Kendall's tau and Kendall's coefficient of concordance.

Measures of agreement within grade levels and between curriculum environments were determined by Kendall's coefficient of concordance and the Pearson correlation coefficient. All tests for significance were made by appropriate tests at the five percent level.

Descriptive data were also obtained from every sample in terms of the eleven items ranked as most characteristic and the eleven items ranked as least characteristic.

III. Hypotheses and Findings

1. Hypotheses

The following set of hypotheses were concerned with the possible variation of the meaning of work held by students on the basis of sex within the grade levels of the curricula environments examined by the study.

These hypotheses stated:

There is no significant differences in the perceived meaning of work between:

1:1 males and females within the same grade level of a pre-vocational curriculum environment.

1:2 males and females within the same grade level of an industrial arts - home economics curriculum environment.

1:3 males and females within the same grade level of an academic curriculum environment.

No significant difference was found in the rankings made by males and those made by females. Since no significant difference in the perception of work according to the ranking of the NWS items was found on the sex variable, this would seem to be an important finding of this study.

A summary of findings will be presented later in this chapter.

2. Hypotheses

The following set of hypotheses were concerned with the possible variation of the meaning of work between the grade eight baseline data and between the grade levels of the pre-vocational curriculum samples.

These hypotheses stated:

There is no significant difference in the perceived meaning of work in a pre-vocational curriculum environment held by:

2:1 males and females in different grade levels.

2:2 males in different grade levels.

2:3 females in different grade levels.

Hypothesis 2:1. No significant difference was found in the way both sexes in either the grade eight baseline levels or in the grade nine, ten and eleven levels ranked the sixty NWS items. This finding was the same for the comparison grade eight baseline data and pre-vocational samples.

A summary of findings will be presented later in this chapter.

However slight differences in the ranking of the eleven most characteristic items between the grade eight baseline level and the grade nine level of the main pre-vocational sample suggested that some change in students' perception of work may have taken place as a result of exposure to the first year of the pre-vocational program. These data were not supported by data from the comparative

pre-vocational sample.

Hypotheses 2:2 and 2:3. Because of the finding related to the sex variable of hypothesis 1:1, hypotheses 2:2 and 2:3 were not tested.

3. Hypotheses

The following set of hypotheses were concerned with the possible variation in the meaning of work between the grade levels of the industrial arts and home economics curriculum environment.

These hypotheses stated:

There is no significant difference in the perceived meaning of work in an industrial arts - home economics curriculum environment held by:

3:1 males and females in different grade levels.

3:2 males in different grade levels.

3:3 females in different grade levels.

Hypothesis 3:1. No significant difference was found in the way both sexes in the grade eight, nine, ten and eleven levels of the industrial arts - home economics curriculum ranked the sixty NWS items.

A summary of findings will be presented later in this chapter.

Hypotheses 3:2 and 3:3. Because of the finding related to the sex variable of hypothesis 1:2, hypotheses 3:2 and 3:3 were not tested.

4. Hypotheses

The following set of hypotheses were concerned with

the possible variation of the meaning of work between the grade levels of the academic curriculum environment.

These hypotheses stated:

There is no significant difference in the perceived meaning of work in an academic curriculum environment held by:

4:1 males and females in different grade levels.

4:2 males in different grade levels.

4:3 females in different grade levels.

Hypothesis 4:1. No significant difference was found in the way both sexes in the grade nine, ten and eleven levels of the academic curriculum environment ranked the sixty NWS items.

A summary of findings will be presented later in this chapter.

Hypotheses 4:2 and 4:3. Because of the finding related to the sex variable of hypothesis 1:3, hypotheses 4:2 and 4:3 were not tested.

5. Hypotheses

The following set of hypotheses were concerned with the possible variation of the meaning of work within grade levels and between the curricula environments examined by this study.

These hypotheses stated:

There is no difference in the perceived meaning of work held by:

5:1 males and females in the same grade level of pre-vocational, industrial arts - home economics and academic curricula environments.

5:2 males in the same grade level of pre-vocational, industrial arts - home economics and academic curricula environments.

5:3 females in the same grade level of pre-vocational industrial arts - home economics and academic curricula environments.

Hypothesis 5:1. No significant difference was found in the way both sexes within the same grade levels of the pre-vocational, industrial arts - home economics and academic curricula environments ranked the sixty NWS items.

A summary of findings will be presented in this chapter.

Hypotheses 5:2 and 5:3. High positive measures of correlation were found between the ranking of the sixty NWS items made by males in the main pre-vocational sample and males within the same grade level of the other curricula environments.

Similar high positive measures of correlation were found for females in the main pre-vocational sample and females within the same grade level of the other curricula environments.

IV. Summary of Findings

The findings of this study may be summarized as follows:

1. No significant difference in the meanings attached to work by the subjects' ranking of the sixty NWS was found according to the variables of sex grade level or exposure to different curricula environments.

Thus, a common perception of work was held by all subjects within the limits of the grade levels and boundaries of the curricula environments examined by this study.

2. In descriptive terms work was most characteristically perceived in terms of satisfaction associated with the needs of self-esteem, esteem for others and creativity. Material and activity needs were not emphasized in the ranking of most characteristic items. Work was also most characteristically perceived with an almost equal focus on self and on others.

3. The least characteristic perception of work reflected the bi-polar structure of the NWS items. Work was perceived least characteristically in terms of dissatisfaction associated with the needs of self-esteem, esteem for others and creativity.

Work was least characteristically perceived with a slightly greater focus on self, which would seem to imply that work is perceived as an activity that provides interaction and affiliation with other people.

4. While slight variations occurred between samples with respect to items perceived as most characteristic, items perceived as least characteristic were comparatively constant. This would seem to imply that children at an early age appear to be more certain in what they dislike about work than what they like about work.

V. Test-Retest Reliability

In order to obtain data on test-retest reliability of the NWS, data were sought from the grade eight level. This grade level was selected because students in grade eight at the Foxtrap junior high school were not involved in either pre-vocational or industrial arts - home economics programs.

The NWS was first administered to a single class of thirty-eight students, sixteen males and twenty-two females, by a staff member on the twenty-fifth of September, 1979. The test was administered by the same staff member to the same class on the sixteenth of October, 1979.

Statistical analysis determined the test-retest reliability of the NWS to be 0.86, Appendix F, Table 53.

VI. Conclusions

The results of this study have indicated that (a) males and females in the samples studied have a common perception of the meaning of work, (b) that no significant variation in the meaning of work exists between the grade levels of every curriculum environment examined and (c) that no significant difference in the meaning of work existed

between curricula environments.

Either differences in the meaning of work as structured by the NWS do not exist or, the instrument was not sensitive enough to assess possible differences. However, it may seem logical to suggest that if differences in the meanings attached to work exist between the variables examined in this study, they may lie outside the theory of work structured by the NWS items.

An important finding of this study would seem to be the common perception of work held by males and by females. Traditional work values described in the literature have indicated that males perceived work as providing them with the opportunity to fulfil material needs and the need of self-esteem. Traditional perceptions of work ascribed to females have been recognized in the past as being in terms of a focus on service and help to others.

The results of this study have shown that both sexes, within the limits of the grade levels examined by this study, perceived work as providing them with a sense of worth, show esteem for others and allow for creativity. These results would seem to confirm the recent trend noted in the literature, that students of both sexes in North America now appear to place less emphasis on the material rewards from work. Students now appear to expect work to be interesting and provide the individual with the opportunity to make personal decisions.

Young people however in western society appear to

have become increasingly walled off from the world of work. Their perception of work would seem to be made from a remote distance. Thus, the common perception of work held by students in this study may simply reflect their perceptions of what work would be like. In this respect adolescent perceptions of the adult world may be removed from reality.

Thus, the common perception of work held by students in all the curricula environments examined by this study may be idealistic. In the real world of work many jobs may be boring and repetitive and provide the individual with little opportunity for self expression.

While the pre-vocational program structure allowed students to explore vocational environments in order to experience skills and gain knowledge that may help with future career decisions, these students are still members of the total school environment. Therefore, it would seem logical to suggest that the common perception of work held by students may result from exposure to the total school environment, whose major role has been viewed as preparing children and youth for entry into society. This consideration also applies to the industrial arts - home economics samples.

It would seem to be important to note that data were gathered from only students who were still in school. The perceptions of the meaning of work held by those individuals who have dropped out of school may be quite different from the data provided in this study.

It has been recognized in the literature that broadly held attitudes to work appear to be well established early on in childhood. The lack of variation of the meaning of work held by different samples, between the grade levels and between curriculum environments, may either mean that exposure to special curricula at the high school level does not radically alter an individual's early perceptions of work, or that data gathered by the NWS may simply refer to the more fundamental perceptions of work held by most young people.

Thus, whatever the particular virtues or limitations of pre-vocational programs may be, they have not been differentiated by the NWS. What has been shown however is that a common perception of work seems to exist among the majority of high school students.

VII. Implications

The results of this study have shown that a common perception of the meaning of work would seem to be held by students in the grade eight through eleven levels in the curricula environments examined by this study.

The implication of this finding would seem to be that while the child's perceptions about work may be formed early in life, the school has an important role in providing children with continuing positive perceptions about the many aspects of work.

With the imminent implementation of a grade twelve level in the province's high schools, new programs for the

high school curricula may not develop their full potential to provide students with the skills and knowledge for the eighties unless based upon programs in the lower grades that develop in all students positive attitudes and perceptions about work. A preoccupation with the task of developing new curricula for the high school at the present time should not detract from the provision of such programs as industrial arts and guidance services in the lower school grades for the purpose of helping students acquire positive orientation toward work.

While the results of this study have not shown that a special perception of work may accrue to students in pre-vocational programs, or in the industrial arts - home economics curricula for that matter, along the dimensions of the Neff Work Sort, that is not to say special perceptions about work held by students in these practical arts programs do not exist.

This would seem to imply a need for the frequent use of the evaluation process when questions about what aims and objectives are being achieved by such programs as pre-vocational education have to be answered.

The failure of the NWS to differentiate any special perception about work held by pre-vocational students would seem to imply that research efforts may need to be directed to different dimensions, than those tested by the NWS for example, in the areas of practical skills and post high school career satisfaction.

Since two objectives of the pre-vocational program were to provide students with experience of the skills used in industry and with occupational information to enable them to make a wise career choice; this would seem to imply that answers to questions about what objectives are being attained by this type of program should be sought from longitudinal studies of pre-vocational graduates presently in the areas of post-secondary training and in the world of work.

The common perception of work held by males and by females in this study would seem to suggest that the majority of young people at the high school level may have definite positive perceptions about work. These future employees perceived work in a broad manner in terms of a source of satisfaction and personal worth and also as providing them with the opportunity to gain and express new ideas.

This would seem to imply that the nature of many jobs in the world of work need to be changed if the positive perceptions of work held by young people are to remain constant after entry to the work force. Failure by employers to make changes in the nature of less rewarding occupations would seem likely to quickly turn positive perceptions of work held by youth to discontent.

The results of this study imply that traditional sex differences in the perception of work held by young people may be fading; this would seem to suggest that young women expect the same needs to be fulfilled by work as those of their male counterparts. Thus, while the common

perception of work held by youth in the samples examined in this study does not directly imply that women are about to compete with men for jobs in all occupations, it does suggest that the school needs to ensure an equal opportunity of access for all students to programs that lead to areas of post-secondary training and those programs that provide an orientation to the world of work.

VIII. Recommendations for Future Research

The findings of this study have shown that a common perception of the meanings attached to work was held by all samples included in this study. Further, the Neff Work Sort failed to differentiate any special meanings of work that may accrue to students as a consequence of exposure to either pre-vocational or industrial arts and home economics programs.

These results would seem to have raised new questions that might be answered by future research. Recommendations for future research are as follows:

1. that formal and comparative evaluations be made of practical arts subjects provided for school students in this Province in the areas of pre-vocational, industrial arts, home economics and business education.

   The purposes of such evaluations would be (a) to determine what aims and objectives are currently being met by these programs and (b) to further determine what changes may be necessary in the content and curricula

structure of these programs in the light of the future implementation of a grade twelve at the high school level.

2. that a longitudinal follow-up study of pre-vocational graduates be undertaken to determine the usefulness of this type of program in aiding students make the transitions from the world of school to the area of post-secondary training and into the world of work.
3. that a similar comparative study be done in this Province to determine the variations that occur on the dimensions of work values and attitudes, vocational maturity as a consequence of the exposure by students to the curricula environments examined by this study.
4. that a study be undertaken in this Province to determine variations in the meanings attached to work, work attitudes and work values below the grade eight level.
5. that a study be undertaken to determine the extent and causes of possible occupational sex-stereotyping in practical arts programs provided for students in this Province.
6. that a study be undertaken to determine the usefulness of the Neff Work Sort in counselling students with work problems in the area of post-secondary technical training.

Concluding Statement

The purpose of this study was to explore the variation in the meaning of work held by students in pre-vocational, industrial arts, home economics and academic curriculum environments. While the results of this study have not

provided answers to some questions that have been raised concerning pre-vocational education, the results of this study will hopefully give rise to useful discussion and stimulate further research in this particular area of education in this Province.

While the Q-technique used to acquire data has been viewed by researchers with some controversy, it would seem to be a useful and novel way to open up new areas of research.

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APPENDIX A

CORRESPONDENCE RELATED TO THE STUDY

MEMORIAL UNIVERSITY OF NEWFOUNDLAND
St. John's, Newfoundland, Canada A1C 5S7

Department of Curriculum and Instruction

Telex: 016-4101
Telephone: (709) 753-1200

November 29, 1978

Dr. Walter Neff
Department of Psychology
New York University
Washington Square
New York, New York
10003
U.S.A.

Dear Dr. Neff:

As a graduate student in the Department of Curriculum and Instruction at Memorial University of Newfoundland, St. John's, I am doing a study - An Investigation of the Meaning of Work to High School Students in Pre-Vocational Programs in Newfoundland - for my Master's degree.

This is a replication of the work done by Dr. Rose (1971) in Alberta with respect to students at the post-secondary level, which was in turn based on your study, using the 60 statement, Q-sort in 1963.

While I have been able to read Dr. Rose's thesis and personally discuss the topic with him in fair detail, I have been unable to locate your article describing the Q-sort instrument used to assess the meaning of work - as reported in Journal of Counseling Psychology 1963, 10, 139 -145.

The above study will use this Q-sort instrument to assess differences (if any) between classes in different vocational environments.

I would be grateful if you could let me have a copy of the 1963 report, together with your latest thoughts on this Q-sort instrument, especially pertaining to its use, analysis and conclusions that can be drawn from the results. I have also read your report on the 'Method for the Analysis...of Q-sort Arrays' in the Psychological Bulletin 1967, 68, #5, 361-368.

While Rose's study includes a relatively complete description of

the 60-statement Q-sort, would it be possible for you to send me the instrument, as I hope to begin the study in January/February 1979?

Yours truly,

Neville Webb
c/o Beverley Rose
Administrative Assistant
Department of Curriculum and
Instruction
Memorial University of Nfld.
St. John's, Newfoundland
A1B 3X8

December 26, 1978
46 Whooping Hollow Road
East Hampton, N.Y. 11937

Dear Mr. Webb:

Enclosed is a copy of the Q-sort on the meaning of work and a copy of a paper describing its construction.

I suppose you are aware that the Q-sort technique is essentially an ipsative device, i.e., it was devised to study single individuals tested on different occasions. It is not suitable for use as a group test, in which the scores of different individuals are compared with each other and with some norm, largely because it is, in principle, not possible to estimate the reliability of Q-sort arrays. I am, therefore, enclosing a transform of the Q items into a conventional Likert-type form. The latter is a more appropriate form to use in group testing.

If you want any further information, let me know.

Sincerely yours,

Walter S. Neff, Ph.D.
Professor Emeritus, New York University

MEMORIAL UNIVERSITY OF NEWFOUNDLAND
St. John's, Newfoundland, Canada A1B 3X8

Department of Curriculum and Instruction

Telex: 016-4101
Telephone: (709) 753-1200

Dear Sir:

As a graduate student in this Department I am undertaking to complete a thesis entitled "An Investigation of the Meaning of Work to High School Students in Pre-Vocational Programs in Newfoundland". This study has been approved by Dr. G. Murphy, my supervisor.

The purpose of the study is to investigate the extent of variation in the meaning attached to work by high school students exposed to Pre-Vocational, Industrial Arts and purely Academic curricula environments.

For the purposes of this study, students in grades 9, 10 and 11 in the above programs, will be asked to respond to a 60-question Q-sort instrument. In addition to the high school students, samples of grade 8 students will be asked to respond to this instrument, for the purpose of providing baseline data. These grade 8 students should not be involved in vocationally oriented programs.

Ninety students (thirty in each grade) at the high school level will be required as sample populations. A lesser number of grade 8 students from a particular system would be sufficient - 60 approximately. The time required for the instrument is estimated at one to one and a half hours.

In no sense are individual students being 'tested'; each student is asked to rank sixty statements about work. The purpose of the data analysis is to measure any significant differences in responses between samples/groups. The significance of the study lies in evaluating

.....2

how curriculum content and structure can ease the transition of students from the world of school to the world of work.

I would like to begin this study with grade 8 students in the later part of February and the remainder as one 9-10-11 group in March. At this time, to avoid compromising students' responses, I would be grateful if the precise nature of the study could be kept secure.

Therefore, I would like your permission to contact the school principals whose schools would be likely to be involved in this study.

Yours truly,

TELEPHONE 753-8830

Roman Catholic School Board for St. John's

BELVEDERE
BONAVENTURE AVENUE
ST. JOHN'S, NEWFOUNDLAND
A1C 3Z4

1979 02 06

Mr. M. Webb
Department of Curriculum and Instruction
Memorial University of Newfoundland
St. John's, Newfoundland
A1B 3X8

Dear Mr. Webb;

I am pleased to grant you permission to contact the Principal of Holy Spirit School, Mr. Joe Downey, with a view to having him co-operate in your study "An Investigation of the Meaning of Work to High School Students in Pre-Vocational Programs in Newfoundland".

Sincerely yours,

Bro. A. F. Brennan
Superintendent

AFB/jd

TELEPHONE 526-2008
526-2006
526-2044

Placentia - St. Mary's R. C. School Board

P. O. BOX 340
PLACENTIA, NEWFOUNDLAND
A0B 2Y0

1979 02 07

Mr. M. Webb
Department of Curriculum and Instruction
Memorial University
St. John's, Nfld.

Dear Mr. Webb:

I am pleased to grant permission for you to contact the following principals with the view to having them co-operate in your study "An Investigation of the Meaning of Work to High School Students in Pre-Vocational Programs in Newfoundland."

Sister Mary Brophy	Holy Rosary School, Freshwater, P.B.
Mr. Fred Mills	St. Peter's School, Jerseyside, P.B.
Mr. George Furey	St. Anne's Academy, Dunville, P.B.
Bro. P. Withers	Laval High School, Placentia
Mr. Michael Boyle	Enright Memorial High School, St. Joseph's
Sr. Rose Crawford	Our Lady of Mt. Carmel High School, Mount Carmel

Yours truly,

John Harte
Superintendent

JH/ce

P. O. Box 278

Telephone 891-1710
891-1711

Roman Catholic School Board
for the
Burin Peninsula
Burin, Newfoundland
A0E 1E0

February 21, 1979

Mr. Neville Webb
c/o Beverly Hyslop
Administration Assistant
Department of Curriculum and Instruction
Memorial University of Newfoundland
St. John's, Newfoundland
A1B 3X8

Dear Mr. Webb:

As a follow-up to my conversation with you February 13, 1979, this is to advise that permission has been given you to conduct your study in the High Schools at Marystown and St. Lawrence. These schools have been advised of your visit and I would suggest that you contact the principals at each school as to the date of your visit. Mr. T. Rossiter is principal at Marystown and Mr. D. Batstone is principal at St. Lawrence.

With every best wish for success with your study. I may get to see you when you return to the area.

Sincerely yours,

A. J. Dober
DISTRICT SUPERINTENDENT

AJD/pl

MEMORIAL UNIVERSITY OF NEWFOUNDLAND
St. John's, Newfoundland, Canada A1B 3X8

Department of Curriculum and Instruction

Telex: 016-4101
Telephone: (709) 753-1200

February 26, 1979

Mr. G. Furey
Principal
St. Anne's Academy
Dunville, Placentia Bay
Newfoundland

Dear Mr. Furey:

With reference to our phone conversation of February 26th, enclosed are details of the test instrument and response record sheet. As I indicated in my initial letter to Mr. Harte, the population for the Pre-Vocational aspect of the study requires 90 (total) grade 9, 10, and 11 students. These would be equal size groups, randomly selected from these grades and divided approximately equally between boys and girls.

My reasons for contacting you at this time were firstly to obtain your permission to involve your students in this study, and secondly to allow you time to decide how to organise the way these students could be brought together for the study.

As you will note from the enclosed information on the test instrument, the instrument is not a questionnaire, but consists of individual packages, each comprising a Q-sort of 60 (3" x 4") cards, instruction and response sheets. This is too bulky for mailing to individual schools.

There are some nine schools involved in the study and most of my visits to these schools will take place in March.

At the present time, I am visiting schools collecting data, and from my own point of view, I can visit your school in the second week of March onwards.

Yours truly,

Neville Webb

NW/em

Enclosures

MEMORIAL UNIVERSITY OF NEWFOUNDLAND
St. John's, Newfoundland, Canada A1B 3X8

Department of Curriculum
and Instruction

Telex: 016-4101
Telephone: (709) 753-1200

March 1, 1979

Mr. F. Bullen
Principal
John Burke Regional High School
Grand Bank, Nfld.
A0E 1W0

Dear Mr. Bullen:

I am writing with reference to my visit to John Burke Regional High School Monday, March 19th.

For the purposes of this study, I need to administer a Q-sort instrument to your students in Grades 8, 9, 10, and 11.

These would preferably be randomly selected as follows:

a) Grade 8: Total 40 students (in both cases equal numbers of boys and girls), from all students who are actively participating in Industrial Arts/Home Economics.

b) Grades 9, 10, and 11: Total 90 students (30 from each grade), from all students who are actively participating in Industrial Arts/Home Economics.

I believe we discussed the possibility of having the Grades 8 and 9 students take the instrument as one group, likewise Grades 10 and 11. The original intention was only to use Grades 9, 10 and 11 students, but since your Grade 8 students are involved in programs that provide some orientation to the world of work and careers, Dr. Spain and I feel Grade 8 students should be included.

Random selection: I would prefer that the students are randomly selected, and for this purpose have enclosed a set of statistical random tables. If you prefer to send us the class lists (of those students involved in Industrial Arts and Home Economics), I could do this before my visit.

For the purposes of validity, I ask that no mention of this study be made to the students either by yourself or the staff involved in these programs. Since a Q-sort does not involve measurement per se, each student response is neither right nor wrong.

...../2

This instrument was used by 40 students this week at the Grade 8 level, and can be completed, if well organised, in about 1 hour to 1 hour 15 minutes.

The students need some space to sort out the Q-sort cards - on Tuesday space was limited, but students managed fairly well. I would appreciate some assistance from staff.

In making the random selection, use numbered class lists (assign each student a number) - this should be done close to the 'test' date. In the case of absentees on the day, we take the next student alternatively up or down the list.*

Thank you very much for cooperation in this study. If all the data is collected by the end of March, some results may be available in April.

I will contact you in the near future to discuss last minute arrangements, and would hope to be in your school early in the morning on the day of my visit.

Yours truly,

Neville Webb

NW/em

Enclosure

* An alternative to random selection is to take every 3rd, 4th, and 5th student - avoiding families; this is not as statistically valid, as some students are then automatically excluded.

MEMORIAL UNIVERSITY OF NEWFOUNDLAND
St. John's, Newfoundland, Canada A1B 3X8

partment of Curriculum
and Instruction

Telex: 016-4101
Telephone: (709) 753-1200

March 1, 1979

Mr. T. Rossiter
Marystown Central High School
Marystown
Newfoundland
A0E 2M0

Dear Mr. Rossiter:

I am writing with reference to my visit to Marystown Central High School Tuesday, March 20th.

For the purposes of this study, I need to administer a Q-sort instrument to your students in Grades 8, 9, 10, and 11.

These would preferably be randomly selected as follows:

a) Grade 8: Total 40 students (in both cases equal numbers of boys and girls), from all students who are actively participating in Industrial Arts/Home Economics.

b) Grades 9, 10, and 11: Total 90 students (30 from each grade), from all students who are actively participating in Industrial Arts/Home Economics.

I believe we discussed the possibility of having the Grades 8 and 9 students take the instrument as one group, likewise Grades 10 and 11. The original intention was only to use Grades 9, 10 and 11 students, but since your Grade 8 students are involved in programs that provide some orientation to the world of work and careers, Dr. Spain and I feel Grade 8 students should be included.

Random selection: I would prefer that the students are randomly selected, and for this purpose have enclosed a set of statistical random tables. If you prefer to send me the class lists (of those students involved in Industrial Arts and Home Economics), I could do this before my visit.

For the purposes of validity, I ask that no mention of this study be made to the students either by yourself or the staff involved in these programs. Since a Q-sort does not involve measurement per se, each student response is neither right nor wrong.

.../2

This instrument was used by 40 students this week at the Grade 8 level, and can be completed, if well organised, in about 1 hour to 1 hour 15 minutes.

The students need some space to sort out the Q-sort cards - on Tuesday space was limited, but students managed fairly well. I would appreciate some assistance from staff.

In making the random selection,* use numbered class lists (assign each student a number) - this should be done close to the 'test' date. In the case of absentees on the day, we take the next student alternatively up or down the list.*

Thank you very much for cooperation in this study. If all the data is collected by the end of March, some results may be available in April.

I will contact you in the near future to discuss last minute arrangements, and would hope to be in your school early in the morning on the day of my visit.

Yours truly,

Nevills Webb

NW/em

Enclosure

* An alternative to random selection is to take every 3rd, 4th, or 5th student - avoiding families; this is not as statistically valid, as some students are then automatically excluded.

APPENDIX B

THE NEFF WORK SORT

Sixty Item Neff Work Sort to Assess the Meaning of Work

Factors		Levels	
A.	Gratification:	(a) Satisfaction	(b) Dissatisfaction
B.	Needs	(c) Material	(d) Activity
		(e) Self-esteem	(f) Esteem by others
		(g) Creativity	
C.	Focus:	(h) On self	(i) On others

2 x 5 x 2 - 20
Replications - 3

ach:	20	Without the money you get from working, there wouldn't be much to make life worthwhile.
	30	The important thing about working is the pay.
	2	If you don't work, there may be no money to take care of you when you're old.
aci:	28	With the money you get from working, you can help support those dear to you.
	21	If you have a job, you can raise a family.
	42	The money you get from working enables you to do things for people.
adh:	6	When you're not working, the time passes very slowly.
	14	Life can get very boring, without something to occupy oneself.
	1	The main thing about working is that it fills your day.
adi:	44	When you're not working, you get lonely.
	41	The big thing about working is that it gets you involved with other people.
	22	The people you work with make the time pass faster.

aeh:	17	Having a job makes you feel you're worth something.
	39	It's a bad feeling to be wholly dependent on others.
	10	If you're not able to work, you can't really feel grown-up.
aei:	19	It makes me feel important when people think I'm doing a good job.
	15	People don't think much of you unless you can hold a job.
	36	What I like about working is the people you meet.
afh:	12	People respect you more if you have a job.
	55	If you aren't able to work, people really do not treat you as an equal.
	26	The important thing about working is the friends you can make on the job.
afi:	54	Working means that you help others and they help you.
	31	You can't expect people to support you all your life. You have to do something for them, too.
	7	Working means that you're pulling your weight along with others.
agh:	24	I find work satisfying because it makes me feel creative
	52	Work gives me a chance to develop new ideas.
	38	If I didn't work, I would feel I am creating nothing.

agi:	45	Work is exciting because of the new ideas people have.
	23	I find when I am working I get all sorts of new ideas from the people I work with.
	11	I have to be working in order to get new ideas from people.
bch:	53	If somebody gave you the same amount of money as you could make, there would be no point in working.
	34	The really lucky people are those who can live without working.
	60	If I could make a living without working, I'd grab the chance.
bci:	51	I work hard enough for my money, without having to support a bunch of other people.
	25	The trouble with working is that it's mostly for the benefit of other people.
	50	I'm not interested in working just because other people want me to.
bdh	49	The trouble with working is that I can't do the things I really want to do.
	58	Work is boring.
	16	Working keeps you tied down.
bdi:	4	The trouble with working is that it keeps me from doing things with the people I like.
	35	When you work, you have to spend time with a lot of boring people.
	57	Working doesn't give you enough time just to be by yourself.

beh:	56	Working just makes me feel like a cog in a machine.
	13	Working is just something you have to do.
	37	I wouldn't work unless I really had to.
bei:	40	Working just puts you in contact with people who give you a hard time.
	3	What I dislike about working is the people you meet.
	27	Working just makes me feel that I'm low man on the totem pole.
bfh:	32	The trouble with working is that you're exposed to people who care nothing about you.
	43	It's tough to have to depend on the opinion of people you work for.
	8	You can't trust people you have to work with.
bfi:	9	I don't see why you have to work in order to be considered part of the human race.
	59	You're not worth much as a person if you don't work.
	33	Work just means you're pleasing other people.
bgh	29	Working means just doing the same things over and over again.
	48	Working just dulls the imagination.
	46	If you have to work, you just have to give up thinking.
bgi:	5	Working just means carrying out someone else's ideas.
	18	When you work, they make you give up your own ideas.
	47	To work means to be forced into a pattern dreamed up by other people.

APPENDIX C

AIDS FOR COLLECTION OF DATA

INSTRUCTION SHEET

People have a lot of different ideas about work. Not everybody thinks the same. We would like to know what YOU think about work.

On the set of cards are things people have said about work. There's nothing wrong or right about them. They are simply ways people have answered the question "What do you think about work?"

BEFORE YOU START, write in your Age, and Check X in the appropriate boxes in the top right-hand corner of the Record Sheet.

Read all the cards QUICKLY. You will be sorting the cards in the order these statements about work mean to you.

1. Sort the cards as follows into three piles:

MOST CHARACTERISTIC	CHARACTERISTIC	LEAST CHARACTERISTIC
11 cards	38 cards	11 cards

2. Now sort the eleven cards in the MOST CHARACTERISTIC Pile as follows:

   a) Place the 2 cards you think as most characteristic in Pile Number 1.

   b) Place the 3 cards you think as next most characteristic in Pile Number 2.

   c) Place the 6 cards you think as next most characteristic in Pile Number 3.

In the top corner of each of these cards is a number. Write the number on the cards in Pile Number 1 in the boxes

in Column 1, and so on for Piles 2 and 3.

3. Now sort the thirty-eight cards in the CHARACTERISTIC Pile as follows:

   a) Place the 11 cards you think as characteristic in Pile Number 4.

   b) Place the 16 cards you think as next characteristic in Pile Number 5.

   c) Place the 11 cards you think as next characteristic in Pile Number 6.

   Write the number on the cards in Pile Number 4 in the boxes in Column 4, and so on for Piles 5 and 6.

4. Now sort the eleven cards in the LEAST CHARACTERISTIC Pile as follows:

   a) Place the 6 cards you think as least characteristic in Pile Number 7,

   b) Place the 3 cards you think as next least characteristic in Pile Number 8.

   c) Place the 2 cards you think as next least characteristic in Pile Number 9.

   Write the number on the cards in Pile Number 7 in the boxes in Column 7, and so on for Piles 8 and 9.

When you have finished recording all the numbers, check over to see you have not missed any. Place all the cards neatly in the envelope provided.

THANK YOU FOR YOUR HELP

IN THIS STUDY

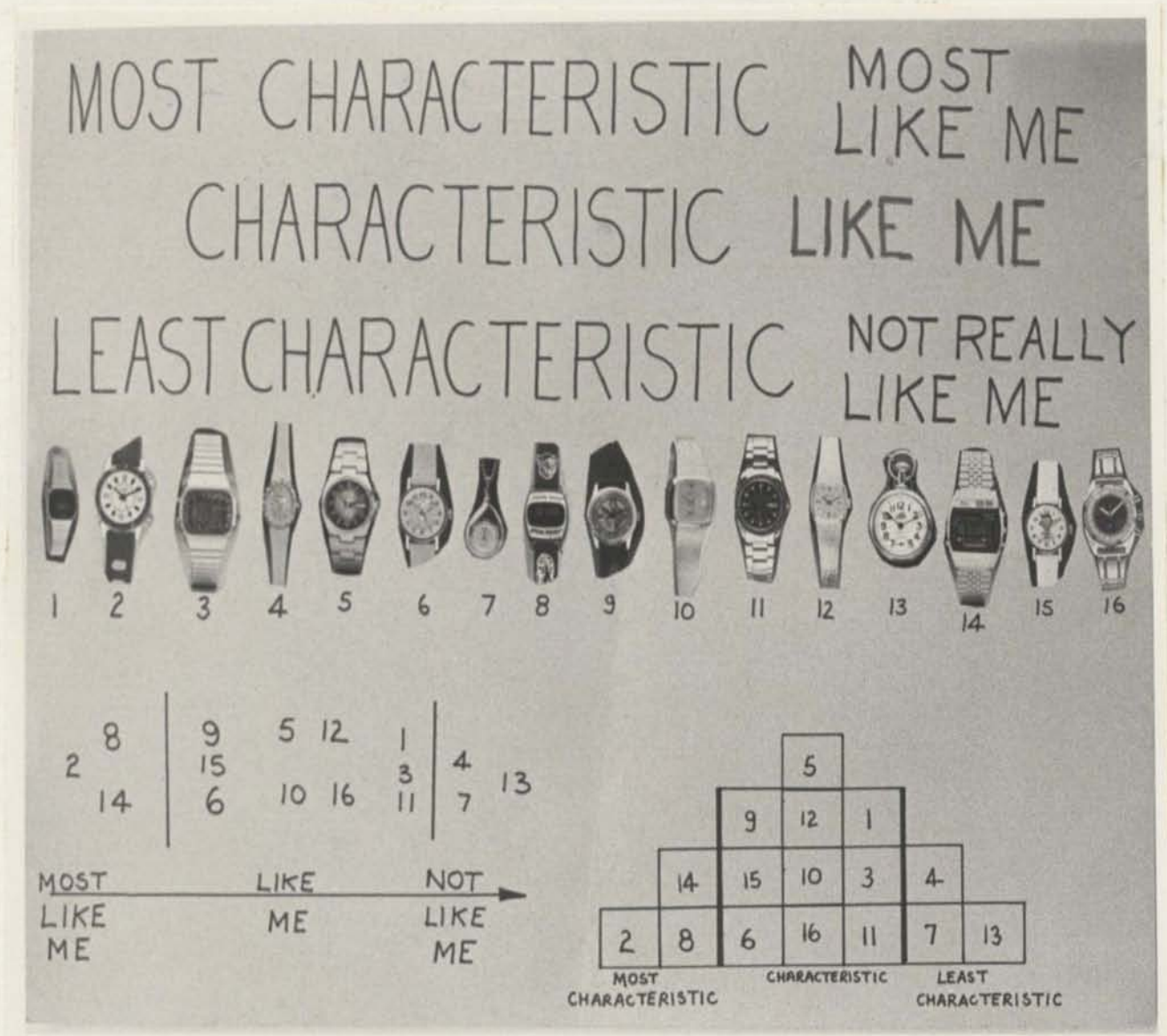


Figure 2. Wall chart illustration for Q-sort procedure.

RECORD SHEET

AGE: _____ YEARS

MALE: ☐

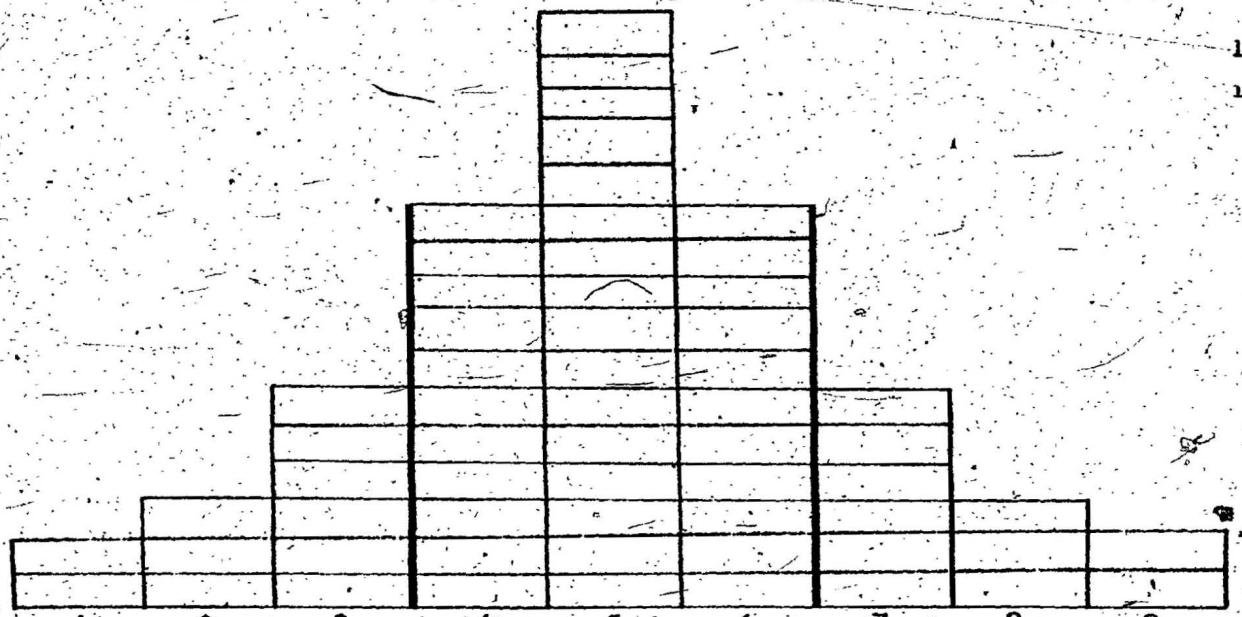
FEMALE: ☐

GRADE: 8 ☐

9 ☐

10 ☐

11 ☐



APPENDIX D

RANKINGS OF NWS ITEMS AND AVERAGE CELL SCORES

Table 22

Average Ranking of NWS Items made by Males and by Females
Grade Eight Baseline Level of Main Pre-Vocational Sample

Ranking for Males

Highest Ranking

Item	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20
Ranking	35.0	39.0	1.0	34.0	26.0	46.0	28.0	12.5	26.0	24.0	29.0	40.0	23.0	51.0	32.0	15.0	49.0	15.5	60.0	37.0
Item	21	22	23	24	25	26	27	28	29	30	31	32	33	34	35	36	37	38	39	40
Ranking	58.0	51.0	53.0	48.0	14.0	53.5	3.0	59.0	10.5	57.0	51.0	12.5	5.5	19.5	2.0	55.0	8.0	46.0	42.5	5.5
Item	41	42	43	44	45	46	47	48	49	50	51	52	53	54	55	56	57	58	59	60
Ranking	46.0	42.5	31.0	38.0	41.0	4.0	17.0	10.5	36.0	22.0	19.5	44.0	30.0	56.0	21.0	9.0	26.0	7.0	18.0	33.0

Lowest Ranking

Ranking for Females

Highest Ranking

Item	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20
Ranking	40.5	32.0	2.0	26.0	22.0	43.0	29.0	8.0	21.0	25.0	31.0	42.0	27.0	55.0	37.0	12.0	53.0	16.5	56.0	28.0
Item	21	22	23	24	25	26	27	28	29	30	31	32	33	34	35	36	37	38	39	40
Ranking	44.0	49.5	49.5	59.0	23.0	54.0	5.0	47.5	20.0	16.5	47.5	24.0	16.5	11.0	6.0	60.0	3.5	46.0	34.0	13.0
Item	41	42	43	44	45	46	47	48	49	50	51	52	53	54	55	56	57	58	59	60
Ranking	57.5	45.0	36.0	38.5	51.5	7.0	19.0	10.0	30.0	40.5	16.5	51.5	9.0	57.5	33.0	3.5	35.0	1.0	38.5	14.0

Lowest Ranking

Table 23

Average Ranking of NWS Items made by Males and by Females. Main Pre-Vocational Sample.

Grade Nine Level

Ranking for Males

Highest Ranking

Item	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20
Ranking	55.0	39.0	6.0	38.0	18.0	34.0	51.0	12.0	23.5	32.0	29.0	44.0	18.0	51.0	35.5	21.5	59.0	15.5	60.0	30.5
Item	21	22	23	24	25	26	27	28	29	30	31	32	33	34	35	36	37	38	39	40
Ranking	46.5	46.5	55.0	57.0	13.0	56.0	4.0	54.0	20.0	43.0	51.0	15.5	7.5	23.5	9.5	46.5	7.5	40.0	42.0	11.0
Item	41	42	43	44	45	46	47	48	49	50	51	52	53	54	55	56	57	58	59	60
Ranking	53.0	41.0	35.5	30.5	49.0	1.0	9.5	5.0	27.5	37.0	14.0	58.0	21.5	46.5	27.5	3.0	25.5	2.0	18.0	25.5

Lowest Ranking

Ranking for Females

Highest Ranking

Item	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20
Ranking	36.0	33.0	6.5	25.0	18.0	44.5	28.0	8.0	23.0	40.0	34.0	37.5	29.0	47.0	32.0	22.0	54.0	14.0	60.0	37.5
Item	21	22	23	24	25	26	27	28	29	30	31	32	33	34	35	36	37	38	39	40
Ranking	43.0	46.0	53.0	51.5	21.0	59.0	4.0	49.0	14.0	35.0	51.5	17.0	14.0	16.0	5.0	58.0	10.0	49.0	42.0	6.5
Item	41	42	43	44	45	46	47	48	49	50	51	52	53	54	55	56	57	58	59	60
Ranking	55.5	44.5	30.0	39.0	49.0	10.0	20.0	2.0	25.0	41.0	12.0	57.0	19.0	55.5	31.0	3.0	27.0	1.0	25.0	10.0

Lowest Ranking

Table 23 (cont'd)

Grade Ten Level

Ranking for Males

Highest Ranking

Item	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20
Ranking	26.0	35.5	9.5	25.0	18.5	40.0	40.0	7.0	27.5	31.5	34.0	49.0	29.5	46.0	37.0	12.0	48.0	14.0	58.5	35.5
Item	21	22	23	24	25	26	27	28	29	30	31	32	33	34	35	36	37	38	39	40
Ranking	50.5	44.0	53.5	55.0	17.0	52.0	2.0	57.0	15.5	40.0	58.5	8.0	18.5	21.0	9.5	47.0	4.0	43.0	50.5	11.0
Item	41	42	43	44	45	46	47	48	49	50	51	52	53	54	55	56	57	58	59	60
Ranking	60.0	45.0	29.5	33.0	42.0	5.5	15.5	3.0	27.5	38.0	13.0	53.5	24.0	56.0	31.5	5.5	23.0	1.0	21.0	21.0

Lowest Ranking

Ranking for Females

Highest Ranking

Item	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20
Ranking	43.0	38.0	6.5	27.0	13.5	40.0	41.0	13.5	26.0	23.0	35.0	42.0	29.5	47.0	29.5	10.5	56.0	21.0	56.0	36.5
Item	21	22	23	24	25	26	27	28	29	30	31	32	33	34	35	36	37	38	39	40
Ranking	36.5	46.0	50.0	59.0	19.5	56.0	4.0	48.0	22.0	33.0	52.5	6.5	16.0	16.0	10.5	58.0	8.0	49.0	44.0	9.0
Item	41	42	43	44	45	46	47	48	49	50	51	52	53	54	55	56	57	58	59	60
Ranking	54.0	45.0	31.5	39.0	51.0	5.0	12.0	2.0	28.0	34.0	16.0	52.5	18.0	60.0	25.0	1.0	31.5	3.0	24.0	19.5

Lowest Ranking

Table 23 (cont'd)

Grade Eleven Level

Ranking for Males

Highest Ranking

Item	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20
Ranking	29.5	44.0	7.0	23.0	21.0	40.5	45.0	11.5	21.0	29.5	31.0	46.0	15.0	48.0	34.0	24.5	54.5	9.5	60.0	33.0
Item	21	22	23	24	25	26	27	28	29	30	31	32	33	34	35	36	37	38	39	40
Ranking	38.0	49.5	53.0	59.0	19.0	47.0	5.0	54.5	27.5	40.5	57.0	16.0	13.5	21.0	11.5	49.5	4.0	42.5	51.0	6.0
Item	41	42	43	44	45	46	47	48	49	50	51	52	53	54	55	56	57	58	59	60
Ranking	56.0	42.5	37.0	36.0	39.0	3.0	8.0	2.0	27.5	35.0	26.0	58.0	17.5	52.0	32.0	9.5	24.5	1.0	13.5	17.5

Lowest Ranking

Ranking for Females

Highest Ranking

Item	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20
Ranking	35.5	38.0	1.0	24.0	19.0	43.0	44.5	8.0	35.5	33.0	27.0	39.0	28.5	48.0	30.5	15.5	58.0	9.0	60.0	33.0
Item	21	22	23	24	25	26	27	28	29	30	31	32	33	34	35	36	37	38	39	40
Ranking	37.0	42.0	52.5	56.0	15.5	49.0	7.0	47.0	21.5	33.0	52.5	20.0	18.0	17.0	10.5	55.0	6.0	46.0	50.0	14.0
Item	41	42	43	44	45	46	47	48	49	50	51	52	53	54	55	56	57	58	59	60
Ranking	59.0	44.5	28.5	41.0	51.0	2.0	21.5	4.0	25.0	40.0	10.5	54.0	12.0	57.0	30.5	5.0	26.0	3.0	23.0	13.0

Lowest Ranking

Table 24

Average Ranking of NWS Items made by Males and by Females
Grade Eight Baseline Level of Comparison Pre-Vocational Sample

Ranking for Males

Highest Ranking

Item	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20
Ranking	43.0	39.0	6.0	33.0	24.5	41.0	31.5	12.0	24.5	31.5	34.0	42.0	21.0	44.0	29.0	8.0	53.0	17.0	56.5	37.5
Item	21	22	23	24	25	26	27	28	29	30	31	32	33	34	35	36	37	38	39	40
Ranking	50.5	48.0	50.5	54.0	11.0	60.0	2.0	58.5	8.0	48.0	56.5	15.0	13.5	13.5	4.5	52.0	10.0	40.0	36.0	17.0
Item	41	42	43	44	45	46	47	48	49	50	51	52	53	54	55	56	57	58	59	60
Ranking	58.5	45.0	37.5	35.0	48.0	8.0	17.0	3.0	29.0	24.5	19.5	55.0	29.0	46.0	22.0	4.5	24.5	1.0	19.5	27.0

Lowest Ranking

Ranking for Females

Highest Ranking

Item	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20
Ranking	35.0	38.0	6.0	33.5	10.0	44.5	26.0	10.0	33.5	39.0	29.0	46.5	24.0	46.5	31.0	21.5	59.0	20.0	56.5	32.0
Item	21	22	23	24	25	26	27	28	29	30	31	32	33	34	35	36	37	38	39	40
Ranking	40.0	42.5	48.0	54.5	17.5	51.0	5.0	54.5	19.0	27.0	58.0	17.5	21.5	3.0	7.5	53.0	13.0	44.5	42.5	7.5
Item	41	42	43	44	45	46	47	48	49	50	51	52	53	54	55	56	57	58	59	60
Ranking	49.0	50.0	37.0	41.0	52.0	13.0	16.0	4.0	25.0	36.0	13.0	60.0	19.0	56.5	29.0	10.0	29.0	1.0	23.0	2.0

Lowest Ranking

Table 25

Average Ranking of NWS Items made by Males and by Females. Comparison Pre-Vocational Sample. Grade Nine Level

Ranking for Males

Highest Ranking

Item	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20
Ranking	28.5	36.0	8.0	33.0	15.5	40.5	42.5	17.0	25.0	40.5	28.5	46.5	19.0	46.5	46.5	25.0	60.0	14.0	56.0	21.5
Item	21	22	23	24	25	26	27	28	29	30	31	32	33	34	35	36	37	38	39	40
Ranking	49.0	38.0	56.0	58.5	23.0	40.5	2.0	40.5	21.5	19.0	56.0	25.0	11.5	6.0	11.5	54.0	5.0	46.5	51.0	15.5
Item	41	42	43	44	45	46	47	48	49	50	51	52	53	54	55	56	57	58	59	60
Ranking	58.5	34.0	37.0	43.5	51.0	8.0	11.5	1.0	32.0	35.0	11.5	53.0	28.5	51.0	19.0	3.0	28.5	4.0	31.0	8.0

Lowest Ranking

Ranking for Females

Highest Ranking

Item	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20
Ranking	30.0	40.5	4.5	37.5	31.5	48.5	11.0	11.0	17.0	43.0	34.0	40.5	15.0	51.5	31.5	21.5	57.0	11.0	59.0	40.5
Item	21	22	23	24	25	26	27	28	29	30	31	32	33	34	35	36	37	38	39	40
Ranking	36.0	46.0	53.0	48.5	11.0	50.0	2.0	54.5	27.5	27.5	58.0	11.0	24.0	24.0	19.0	56.0	15.0	45.0	37.5	15.0
Item	41	42	43	44	45	46	47	48	49	50	51	52	53	54	55	56	57	58	59	60
Ranking	54.5	47.0	34.0	40.5	44.0	7.0	8.0	1.0	37.5	34.0	21.5	51.5	19.0	60.0	19.0	6.0	24.0	3.0	27.5	4.5

Lowest Ranking

Table 25 (cont'd)

Grade Ten Level

Ranking for Males

Highest Ranking

Item	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20
Ranking	37.5	36.0	3.0	55.0	27.0	30.5	43.5	14.0	10.5	29.0	41.0	48.0	24.5	39.0	10.5	14.0	57.0	19.0	60.0	33.0
Item	21	22	23	24	25	26	27	28	29	30	31	32	33	34	35	36	37	38	39	40
Ranking	33.0	43.5	49.5	51.0	30.5	47.0	24.5	54.0	7.5	42.0	52.5	16.0	10.5	21.0	7.5	56.0	10.5	46.0	45.0	14.0
Item	41	42	43	44	45	46	47	48	49	50	51	52	53	54	55	56	57	58	59	60
Ranking	55.0	49.5	23.0	21.0	52.5	5.0	5.0	2.0	33.0	17.5	21.0	59.0	27.0	58.0	40.0	1.0	27.0	5.0	37.5	17.5

Lowest Ranking

Ranking for Females

Highest Ranking

Item	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20
Ranking	36.0	32.5	3.0	21.5	12.0	39.0	24.5	6.5	24.5	30.5	36.0	39.0	28.5	49.0	15.0	11.0	57.5	15.0	57.5	27.0
Item	21	22	23	24	25	26	27	28	29	30	31	32	33	34	35	36	37	38	39	40
Ranking	43.0	45.5	51.5	51.5	15.0	49.0	9.0	49.0	9.0	36.0	54.5	19.0	15.0	19.0	9.0	54.5	3.0	39.0	44.0	6.5
Item	41	42	43	44	45	46	47	48	49	50	51	52	53	54	55	56	57	58	59	60
Ranking	60.0	45.5	34.0	42.0	53.0	15.0	24.5	3.0	30.5	47.0	19.0	56.0	28.5	59.0	21.5	5.0	24.5	1.0	41.0	32.5

Lowest Ranking

Table 25 (cont'd)

Grade Eleven Level

Ranking for Males

Highest Ranking

Item	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20
Ranking	40.0	26.0	11.5	38.5	19.0	41.5	48.5	8.0	11.5	30.5	30.5	45.5	36.0	43.0	33.0	15.5	56.0	20.0	56.0	29.0
Item	21	22	23	24	25	26	27	28	29	30	31	32	33	34	35	36	37	38	39	40
Ranking	36.0	38.5	50.0	58.0	10.0	45.5	3.0	60.0	17.5	41.5	54.0	15.5	27.5	22.5	8.0	47.0	1.5	59.0	56.0	13.0
Item	41	42	43	44	45	46	47	48	49	50	51	52	53	54	55	56	57	58	59	60
Ranking	52.5	48.5	25.0	36.0	44.0	6.0	17.5	4.5	27.5	21.0	8.0	52.5	22.5	51.0	34.0	4.5	24.0	1.5	32.0	14.0

Lowest Ranking

Ranking for Females

Highest Ranking

Item	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20
Ranking	34.0	36.0	1.0	22.0	22.0	40.0	41.5	10.5	31.0	36.0	33.0	43.5	24.5	46.5	31.0	8.5	59.0	19.0	60.0	38.5
Item	21	22	23	24	25	26	27	28	29	30	31	32	33	34	35	36	37	38	39	40
Ranking	41.5	38.5	48.5	57.0	8.5	53.0	5.5	51.0	16.5	26.0	55.0	10.5	22.0	19.0	7.0	53.0	5.5	48.5	46.5	13.0
Item	41	42	43	44	45	46	47	48	49	50	51	52	53	54	55	56	57	58	59	60
Ranking	57.0	45.0	27.5	36.0	50.0	13.0	13.0	2.0	31.0	43.5	24.5	53.0	15.0	57.0	27.5	4.0	19.0	3.0	29.0	16.5

Lowest Ranking

Table 26

Average Ranking of NWS Items made by Males and by Females. Industrial Arts and Home Economics Samples. Grade Eight Level

Ranking for Males

Highest Ranking

Item	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20
Ranking	38.5	37.0	2.0	28.5	15.0	42.0	34.5	11.5	20.0	38.5	31.5	50.0	41.0	46.0	36.0	10.0	60.0	13.5	59.0	40.0
Item	21	22	23	24	25	26	27	28	29	30	31	32	33	34	35	36	37	38	39	40
Ranking	43.5	47.5	47.5	51.0	16.0	56.0	4.0	54.0	25.0	34.5	52.5	19.0	21.0	11.5	7.0	55.0	5.5	52.5	28.5	13.5
Item	41	42	43	44	45	46	47	48	49	50	51	52	53	54	55	56	57	58	59	60
Ranking	43.5	49.0	33.0	25.0	45.0	5.5	17.0	9.0	31.5	25.0	8.0	57.5	18.0	57.5	30.0	1.0	23.0	3.0	27.0	22.0

Lowest Ranking

Ranking for Females

Highest Ranking

Item	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20
Ranking	39.0	38.0	2.0	27.0	18.0	41.0	31.0	7.0	28.0	36.0	26.0	43.0	29.5	44.5	34.0	11.0	54.0	20.0	59.0	37.0
Item	21	22	23	24	25	26	27	28	29	30	31	32	33	34	35	36	37	38	39	40
Ranking	44.5	52.0	53.0	55.0	12.0	51.0	9.5	47.5	15.0	35.0	49.5	17.0	20.0	8.0	4.0	56.5	16.0	46.0	42.0	16.0
Item	41	42	43	44	45	46	47	48	49	50	51	52	53	54	55	56	57	58	59	60
Ranking	58.0	47.5	32.5	40.0	49.5	13.0	22.0	5.0	29.5	24.0	9.5	56.5	20.0	60.0	32.5	3.0	23.0	1.0	25.0	14.0

Lowest Ranking

Table 26 (cont'd)

Grade Nine Level

Ranking for Males

Highest Ranking

Item	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20
Ranking	37.0	38.5	7.5	22.5	21.0	41.5	40.0	12.0	30.0	31.0	34.5	43.0	26.5	48.5	29.0	15.0	55.0	12.0	60.0	33.0
Item	21	22	23	24	25	26	27	28	29	30	31	32	33	34	35	36	37	38	39	40
Ranking	41.5	47.0	56.5	56.5	20.0	50.0	1.0	44.0	26.5	38.5	51.5	9.0	17.0	2.0	7.5	58.0	4.0	48.5	46.0	10.0
Item	41	42	43	44	45	46	47	48	49	50	51	52	53	54	55	56	57	58	59	60
Ranking	53.0	45.0	32.0	34.5	54.0	12.0	18.0	5.0	15.0	36.0	15.0	59.0	24.5	51.5	28.0	6.0	22.5	3.0	24.5	19.0

Lowest Ranking

Ranking for Females

Highest Ranking

Item	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20
Ranking	42.5	32.5	4.0	29.5	20.5	40.0	31.0	12.5	33.0	37.5	37.5	41.0	27.5	45.5	20.5	22.5	56.0	24.0	55.0	35.5
Item	21	22	23	24	25	26	27	28	29	30	31	32	33	34	35	36	37	38	39	40
Ranking	52.5	42.5	47.0	48.5	19.0	54.0	5.0	50.0	12.5	39.0	59.0	8.5	17.5	15.0	10.0	58.0	6.0	48.5	44.0	12.5
Item	41	42	43	44	45	46	47	48	49	50	51	52	53	54	55	56	57	58	59	60
Ranking	52.5	45.5	33.0	33.0	51.0	8.5	12.5	3.0	22.5	25.0	7.0	57.0	16.0	60.0	29.5	2.0	27.5	1.0	17.5	26.0

Lowest Ranking

Table 26 (cont'd)

Grade Ten Level

Ranking for Males

Highest Ranking

Item	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20
Ranking	33.0	34.0	4.0	35.5	15.5	45.0	45.0	5.0	29.0	22.0	17.0	52.5	29.0	52.5	26.0	31.5	57.0	8.0	59.0	38.0
Item	21	22	23	24	25	26	27	28	29	30	31	32	33	34	35	36	37	38	39	40
Ranking	45.0	39.0	58.0	47.0	23.0	42.5	9.0	56.0	21.0	48.5	60.0	13.5	18.5	13.5	7.0	54.0	1.0	40.0	48.5	11.5
Item	41	42	43	44	45	46	47	48	49	50	51	52	53	54	55	56	57	58	59	60
Ranking	51.0	41.0	31.5	20.0	42.5	6.0	10.0	11.5	35.5	37.0	24.0	55.0	25.0	50.0	27.0	3.0	29.0	2.0	15.5	18.5

Lowest Ranking

Ranking for Females

Highest Ranking

Item	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20
Ranking	37.5	35.0	1.0	43.0	20.0	39.0	27.5	13.5	29.5	27.5	23.5	37.5	32.0	48.0	23.5	11.0	46.0	13.5	58.0	29.5
Item	21	22	23	24	25	26	27	28	29	30	31	32	33	34	35	36	37	38	39	40
Ranking	40.5	49.0	54.0	57.0	15.5	50.0	6.0	55.5	31.0	33.5	52.5	6.0	21.0	17.5	6.0	55.5	11.0	40.5	47.0	8.5
Item	41	42	43	44	45	46	47	48	49	50	51	52	53	54	55	56	57	58	59	60
Ranking	59.0	50.5	33.5	42.0	45.0	11.0	8.5	4.0	36.0	44.0	15.5	52.5	19.0	60.0	26.0	3.0	23.5	2.0	17.5	23.5

Lowest Ranking

Table 26 (cont'd)

Grade Eleven Level

Ranking for Males

Highest Ranking

Item	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20
Ranking	32.5	22.5	2.0	37.5	24.0	30.0	46.0	7.0	34.5	27.0	34.5	40.0	30.0	52.0	28.0	11.5	59.0	13.0	60.0	25.5
Item	21	22	23	24	25	26	27	28	29	30	31	32	33	34	35	36	37	38	39	40
Ranking	30.0	49.5	45.0	56.0	18.5	57.0	11.5	47.5	20.5	43.5	54.0	16.0	9.5	14.5	5.0	49.5	7.0	43.5	54.0	9.6
Item	41	42	43	44	45	46	47	48	49	50	51	52	53	54	55	56	57	58	59	60
Ranking	54.0	41.0	39.0	20.5	42.0	1.0	14.5	3.0	32.5	47.5	17.0	51.0	18.5	58.0	36.0	4.0	37.5	2.0	22.5	25.5

Lowest Ranking

Ranking for Females

Highest Ranking

Item	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20
Ranking	33.0	28.5	5.0	35.0	14.0	39.0	49.0	7.0	37.0	23.0	28.5	41.5	26.0	43.0	33.0	21.0	55.0	8.5	56.0	25.0
Item	21	22	23	24	25	26	27	28	29	30	31	32	33	34	35	36	37	38	39	40
Ranking	27.0	44.0	50.0	57.0	12.0	58.5	1.0	46.0	18.0	40.0	51.0	15.5	15.5	20.0	17.0	58.5	11.0	41.5	46.0	8.5
Item	41	42	43	44	45	46	47	48	49	50	51	52	53	54	55	56	57	58	59	60
Ranking	60.0	48.0	33.0	31.0	52.0	4.0	13.0	2.5	38.0	46.0	10.0	54.0	24.0	53.0	36.0	6.0	30.0	2.5	19.0	22.0

Lowest Ranking

Table 27

Average Ranking of NWS Items made by Males and by Females. Academic Samples.
Grade Nine Level

Ranking for Males

Highest Ranking

Item	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20
Ranking	25.0	45.0	2.0	26.5	23.0	46.5	36.5	5.5	14.5	36.5	29.0	44.0	18.5	46.5	23.0	38.0	54.5	21.0	60.0	33.5
Item	21	22	23	24	25	26	27	28	29	30	31	32	33	34	35	36	37	38	39	40
Ranking	51.5	50.0	54.5	56.5	13.0	48.5	5.5	48.5	17.0	28.0	59.0	20.0	18.5	11.0	11.0	42.5	1.0	56.5	42.5	14.5
Item	41	42	43	44	45	46	47	48	49	50	51	52	53	54	55	56	57	58	59	60
Ranking	53.0	40.5	30.5	40.5	39.0	7.0	16.0	3.5	33.5	35.0	32.0	58.0	8.5	51.5	26.5	8.5	23.0	3.5	30.5	11.0

Lowest Ranking

Ranking for Females

Highest Ranking

Item	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20
Ranking	31.0	38.0	6.5	22.0	14.5	42.5	37.0	8.5	26.5	25.0	26.5	42.5	32.0	46.0	33.0	22.0	50.5	10.0	59.0	34.0
Item	21	22	23	24	25	26	27	28	29	30	31	32	33	34	35	36	37	38	39	40
Ranking	41.0	45.0	56.0	60.0	14.5	49.0	8.5	55.0	19.0	20.5	50.5	19.0	17.0	13.0	11.0	52.0	1.0	48.0	39.0	19.0
Item	41	42	43	44	45	46	47	48	49	50	51	52	53	54	55	56	57	58	59	60
Ranking	53.0	47.0	35.5	44.0	54.0	4.0	12.0	3.0	28.5	40.0	6.5	58.0	16.0	57.0	30.0	5.0	24.0	2.0	35.5	22.0

Lowest Ranking

Table 27 (cont'd)

Grade Ten Level

Ranking for Males

Highest Ranking

Item	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20
Ranking	33.0	37.5	4.0	42.5	13.0	39.5	29.0	9.5	23.0	32.0	19.5	55.0	21.0	53.0	47.0	15.0	60.0	29.0	59.0	41.0
Item	21	22	23	24	25	26	27	28	29	30	31	32	33	34	35	36	37	38	39	40
Ranking	51.5	36.0	58.0	47.0	23.0	37.5	1.0	44.5	18.0	51.5	55.0	4.0	16.5	11.5	14.0	47.0	2.0	34.5	49.0	6.5
Item	41	42	43	44	45	46	47	48	49	50	51	52	53	54	55	56	57	58	59	60
Ranking	44.5	39.5	26.0	29.0	42.5	4.0	23.0	6.5	31.0	50.0	34.4	57.0	8.0	55.0	26.0	11.5	16.5	9.5	26.0	19.5

Lowest Ranking

Ranking for Females

Highest Ranking

Item	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20
Ranking	38.0	29.0	11.5	29.0	23.5	48.0	38.0	2.0	23.5	32.0	38.0	41.5	29.0	53.5	32.0	26.5	56.0	11.5	59.0	34.0
Item	21	22	23	24	25	26	27	28	29	30	31	32	33	34	35	36	37	38	39	40
Ranking	41.0	40.0	53.5	57.5	13.5	49.5	5.0	43.0	9.0	35.0	53.5	17.5	9.0	19.5	6.5	53.5	9.0	51.0	44.0	15.5
Item	41	42	43	44	45	46	47	48	49	50	51	52	53	54	55	56	57	58	59	60
Ranking	46.0	49.5	32.0	26.5	45.0	4.0	21.5	6.5	25.0	47.0	19.5	60.0	13.5	57.5	17.5	2.0	36.0	2.0	21.5	15.5

Lowest Ranking

Table 27 (cont'd)

Grade Eleven Level

Ranking for Males

Highest Ranking

Item	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20
Ranking	27.0	24.5	12.5	24.5	21.0	42.0	36.0	9.5	9.5	31.5	31.5	55.0	29.5	46.5	42.0	15.0	60.0	18.0	59.0	38.0
Item	21	22	23	24	25	26	27	28	29	30	31	32	33	34	35	36	37	38	39	40
Ranking	50.5	42.0	55.0	58.0	5.0	46.5	4.0	52.5	26.0	40.0	48.5	22.0	20.0	17.0	16.0	39.0	1.5	55.0	44.0	12.5
Item	41	42	43	44	45	46	47	48	49	50	51	52	53	54	55	56	57	58	59	60
Ranking	45.0	50.5	33.0	29.5	48.5	6.5	9.5	1.5	28.0	37.0	14.0	57.0	9.5	52.5	34.5	6.5	19.0	3.0	44.5	23.0

Lowest Ranking

Ranking for Females

Highest Ranking

Item	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20
Ranking	22.5	31.0	4.5	27.0	16.5	38.5	40.0	7.5	29.0	32.5	25.0	48.0	25.0	47.0	38.5	19.0	55.0	9.5	55.0	37.0
Item	21	22	23	24	25	26	27	28	29	30	31	32	33	34	35	36	37	38	39	40
Ranking	42.0	41.0	51.0	59.0	16.5	45.5	4.5	52.5	21.0	29.0	43.5	19.0	12.5	15.0	14.0	50.0	2.0	55.0	43.5	11.0
Item	41	42	43	44	45	46	47	48	49	50	51	52	53	54	55	56	57	58	59	60
Ranking	37.0	45.5	35.0	35.0	49.0	6.0	25.0	7.5	22.5	52.5	9.5	58.0	29.0	60.0	35.0	3.0	19.0	1.0	32.5	12.5

Lowest Ranking

Table 28

Ranking of Average Cell Scores made by Males and by Females
Grade Eight Baseline Level of Main Pre-Vocational Sample

Ranking for Males

BEI	BGH	BEH	BFI	BCI	BFH	BGI	BDH	BDI	BCH	AFH	AEH	AGI	ADH	AFI	ADI	ACH	AGH	AEI	ACI
11.26	11.97	12.69	12.97	13.17	13.26	13.31	13.46	13.54	14.46	16.20	16.37	16.63	16.97	17.06	17.20	17.23	17.43	17.80	18.57

Ranking for Females

BEI	BEH	BGH	BCH	BDH	BGI	BDI	BEH	BFI	BCI	ACH	AEH	AFH	ADH	ACI	AGI	AEI	ADI	AEI	AGH
10.68	11.35	11.55	11.58	11.87	12.68	13.61	13.61	13.94	14.13	14.23	16.42	17.23	17.61	17.84	17.90	18.00	18.58	19.13	19.42

Table 29

Ranking of Average Cell Scores made by Males and by Females
Main Pre-Vocational Samples
Grade Nine Level

Ranking for Males

BEI	BGH	BEH	BGI	BFI	BDH	BFH	BCI	BDI	BDH	ACH	ADH	AFH	ADI	AGI	AEH	ACI	AEI	AFI	AGH
10.78	10.78	11.33	12.30	12.56	12.59	13.41	14.81	13.89	14.00	16.26	16.48	17.22	17.33	17.48	17.63	18.04	18.30	18.37	19.00

Ranking for Females

BEI	BGH	BCH	BEH	BDH	BGI	BFH	BDI	BFI	BCI	ACH	ADH	AFH	AEH	AFI	AGI	ACI	ADI	AEI	AGH
10.81	11.13	11.97	12.00	12.29	12.42	12.71	12.87	13.06	13.74	15.84	17.29	17.52	17.74	17.81	17.81	17.84	17.97	19.42	19.42

Table 29 (cont'd)

Grade Ten Level

Ranking for Males

BEI	BGH	BDH	BEH	BFH	BGI	BDI	BCH	BFI	BCI	ACH	ADH	AGI	AEH	AFH	ADI	AEI	AGH	ACI	AFI
10.42	10.58	11.62	11.62	12.23	12.31	12.96	13.27	13.58	13.62	16.38	16.58	17.50	17.58	17.81	18.04	18.42	18.88	18.96	19.27

Ranking for Females

BEI	BGH	BEH	BDH	BGI	BCH	BFH	BFI	BCI	BDI	ACH	AEH	AEH	ACI	ADH	ADI	AGI	AEI	AFI	AGH
10.69	10.85	11.31	11.54	12.00	12.19	12.46	12.92	13.12	13.23	15.38	17.15	17.31	17.58	17.69	18.35	18.54	18.88	19.81	20.50

Table 29 (cont'd)

Grade Eleven Level

Ranking for Males

BGH	BEI	BEH	BDH	BGI	BFI	BCH	BDI	BFH	BCI	ACH	ADH	AFH	AGI	AEH	ACI	ADI	AEI	AFI	AGH
10.88	11.16	11.32	11.96	12.08	12.52	12.92	12.92	13.68	14.00	16.48	16.60	16.72	16.88	17.68	18.16	18.32	18.56	19.00	19.72

Ranking for Females

BEI	BGH	BEH	BDH	BCH	BGI	BFH	BDI	BCI	BFI	ACH	AFH	ADH	ACI	AGI	ADI	AEH	AFI	AEI	AGH
9.88	10.00	11.32	11.40	11.52	12.04	12.64	12.92	13.16	13.56	15.48	16.92	17.48	17.52	18.08	18.84	18.84	19.80	19.84	20.32

Table 30

Ranking of Average Cell Scores made by Males and by Females
Grade Eight Baseline Level of Comparison Pre-Vocational Samples

Ranking for Males

BEI	BGH	BDH	BEH	BCI	BDI	BFI	BGI	BCH	BFH	AEH	ACH	AFH	ADH	AGI	AFI	AEI	ADI	AGH	ACI
10.83	10.88	11.25	11.88	12.96	13.00	13.25	13.33	13.63	13.71	16.46	16.63	17.00	17.25	17.29	17.54	17.75	17.92	18.54	18.92

Ranking for Females

BCH	BEI	BGH	BGI	BDH	BEH	BCI	BFH	BDI	BFI	ACH	ADH	AFH	AGI	ADI	AEI	AFI	AEH	ACI	AGH
10.15	10.60	11.10	11.60	11.70	11.80	12.90	12.95	13.40	13.50	15.20	17.25	17.30	17.60	18.15	18.45	18.60	18.65	19.10	20.00

Table 31

Ranking of Average Cell Scores made by Males and by Females
Comparison Pre-Vocational Samples
Grade Nine Level

Ranking for Males

BEH	BEI	BGH	BCH	BGI	BDH	BFI	BDI	BCI	ADH	BFH	AFH	ADH	ACI	AGI	ADL	AFI	AEH	AEI	AGH
10.50	10.70	10.70	12.00	12.00	12.60	13.30	13.60	13.70	14.10	14.30	16.00	16.40	16.90	17.80	18.40	18.90	19.30	19.40	19.40

Ranking for Females

BEI	BGI	BEH	BCH	BDH	BGI	BFH	BCI	BFI	BDI	ADH	AFH	AGI	ADH	ACI	ADI	AEH	AGH	AFI	AEI
10.13	10.88	11.50	12.13	12.25	12.50	12.75	13.25	13.25	14.00	15.38	16.00	17.25	17.50	18.00	18.13	18.13	18.63	19.25	19.50

Table 31 (cont'd)

Grade Ten Level

Ranking for Males

BGH	BEH	BEI	BGI	BDH	BFH	BFI	BDH	BCI	BDI	ADH	ACH	ADI	AEH	AFH	ACI	AEI	AGI	AFI	AGH
10.67	11.50	11.92	12.67	12.75	12.75	13.25	13.33	13.58	13.67	15.50	15.92	16.92	17.67	17.67	17.83	18.17	18.25	19.42	19.58

Ranking for Females

BEI	BGH	BEH	BDH	BGI	BDI	BFH	BCH	BFI	BCI	ACH	AFH	ADH	ACI	AEH	AEI	AGI	AFI	AGH	ADI
10.78	11.22	11.67	12.00	12.67	12.78	13.11	14.11	14.11	14.44	14.89	16.00	16.78	17.78	17.89	18.00	18.11	18.67	18.78	19.22

Table 31 (cont'd)

Grade Eleven Level

Ranking for Males

BEI	BGH	BCI	BDH	BDH	BFH	BGI	BCH	BDI	BFI	ACH	AGI	ADH	AFH	ADI	AEI	AEH	ACI	AFI	AGH
10.50	10.75	11.42	11.67	11.83	12.08	12.50	12.75	13.58	13.67	15.50	17.33	17.42	17.50	17.58	18.42	19.00	19.08	19.42	21.00

Ranking for Females

BEI	BGH	BEH	BDH	BDI	BCH	BGI	BFH	BFI	BCI	ACH	ADH	AFH	ADI	AGI	ACI	AEH	AEI	AFI	AGH
10.31	11.00	11.54	12.00	12.08	12.23	12.31	12.38	13.85	14.08	15.15	16.92	17.31	17.62	17.85	18.38	18.69	19.38	19.69	20.23

Table 32

Ranking of Average Cell Scores made by Males and by Females
Industrial Arts and Home Economics Samples
Grade Eight Level

Ranking for Males

BEI	BDH	BEH	BGI	BGH	BCH	BCI	BFH	BDI	BFI	ACH	ADI	AGI	ADH	AEH	AFH	ACI	AFI	AEI	AGH
11.30	12.73	12.73	12.82	12.88	13.15	13.24	13.64	13.70	13.91	15.97	16.36	16.55	16.64	17.36	17.36	17.79	17.91	18.03	18.94

Ranking for Females

BEI	BDH	BGH	BEH	BCH	BCI	BDI	BFH	BGI	BFI	ACH	ADH	AFH	AEH	AGI	ACI	AFI	AEI	ADI	AGH
11.39	11.58	11.79	11.89	12.34	12.47	12.76	12.87	13.13	13.87	15.63	17.13	17.16	17.55	17.68	18.18	18.26	18.71	18.92	19.66

Table 32 (cont'd)

Grade Nine Level

Ranking for Males

BEI	BEH	BDH	BCH	BGH	BDI	BGI	BFH	BFI	BCI	ACH	AFH	ADH	AEH	ADI	ACI	AFI	AGI	AEI	AGH
10.91	11.64	11.77	12.14	12.27	12.82	12.82	12.91	13.55	13.86	15.91	16.73	17.18	17.50	17.68	17.77	18.27	18.36	18.95	19.95

Ranking for Females

BEI	BGH	BEH	BDH	BCI	BCH	BFH	BGI	BFI	BDI	ACH	AFH	ADI	ADH	AEH	AGI	AEI	ACI	AGH	AFI
10.88	11.36	11.48	12.00	12.72	13.12	13.16	13.16	13.56	13.80	15.32	16.88	17.32	17.40	17.76	17.80	17.88	18.92	19.12	19.36

Table 32 (cont'd)

Grade Ten Level

Ranking for Males

BEI	BEH	BGI	BGH	BFH	BCH	BFI	BDH	BDI	BCI	ADI	ACH	AGI	AFH	AEH	ADH	AEI	AGH	ACI	AFI
11.93	12.10	12.41	12.52	13.00	13.41	13.62	13.66	13.97	14.69	16.10	16.55	16.62	16.83	16.90	17.07	17.52	17.76	17.90	18.45

Ranking for Females

BEI	BGI	BGH	BDH	BEH	BCH	BFH	BFI	BCI	BDI	ACH	AFH	ADH	AGI	AEH	AEI	AFI	ACI	AGH	ADI
10.57	12.29	12.52	12.62	12.62	12.90	12.95	13.48	14.00	14.10	15.10	16.29	16.95	17.05	17.14	18.14	18.38	18.48	18.62	18.81

Table 32 (cont'd)

Grade Eleven Level

Ranking for Males

BEI	BGH	BEH	BDH	BGI	BFH	BFI	BCH	BDI	BCI	ACH	ADH	ACI	AGI	ADI	AFH	AEH	AEI	AGH	AFI
10.90	11.15	11.90	12.40	12.95	13.50	13.50	13.55	13.75	15.10	15.35	16.30	16.85	16.90	17.25	17.30	18.00	18.50	18.65	19.20

Ranking for Females

BEI	BGH	BGI	BEH	BDH	BFH	BCH	BFI	BCI	BDI	ACH	ADH	ACI	AEH	AGI	AFH	ADI	AEI	AFI	AGH
9.83	10.25	11.42	11.88	12.63	12.63	13.38	13.50	13.58	14.17	15.17	16.33	17.08	17.71	18.00	18.08	18.50	19.46	19.58	19.83

Table 33

Ranking of Average Cell Scores made by Males and by Females
Academic Samples
Grade Nine Level

Ranking for Males

BEI	BEH	BGH	BCH	BFH	BDI	BFI	BGI	BDH	BCI	ACH	AFH	ADH	AGI	AEH	AEI	ACI	ADI	AFI	AGH
11.48	11.71	12.05	12.38	13.48	13.86	13.86	13.95	14.10	14.48	15.71	16.43	16.48	16.57	16.95	17.19	17.52	17.62	18.00	19.19

Ranking for Females

BGH	BEH	BEI	BGI	BDH	BCH	BDI	BFH	BCI	BFI	ACH	AEH	ADH	AFH	AGI	ADI	AFI	ACI	AEI	AGH
11.28	11.72	11.83	11.97	12.34	12.62	12.69	13.07	13.24	13.79	14.69	16.34	16.48	16.72	18.34	18.48	18.59	18.66	18.86	21.28

Table 33 (cont'd)

Grade Ten Level

Ranking for Males

BEI	BEH	BGH	BCH	BFH	BDH	BGI	BFI	BDI	ADI	BCI	AFH	ADH	AGI	ACH	ACI	AFI	AGH	AEH	AEI
11.38	12.50	12.56	12.94	12.94	13.56	14.00	14.19	14.44	15.81	15.81	16.25	16.50	16.63	16.75	16.94	16.94	17.06	17.69	18.13

Ranking for Females

BGH	BEI	BEH	BFH	BCH	BDH	BFI	BGI	BDI	BCI	ACH	ADI	AFH	AEH	ACI	AGI	ADH	AEI	AFI	AGH
11.08	11.77	12.08	12.69	12.85	12.85	13.00	13.08	13.77	14.54	14.92	16.08	16.23	17.23	17.46	17.54	18.00	18.31	18.62	20.92

Table 33 (cont'd)
Grade Eleven Level

Ranking for Males

BEI	BGH	BEH	BDH	BGI	BCH	BDI	BCI	BFI	BFH	ADH	ADH	ADI	AGI	AFH	AFI	AEH	AEI	ACI	AGH
11.11	11.53	11.79	12.11	12.32	12.42	12.95	13.00	13.53	13.63	16.05	16.68	16.79	17.79	17.84	18.00	18.32	18.63	18.84	19.68

Ranking for Females

BEI	BEH	BDH	BGH	BGI	BCH	BDI	BFH	BFI	ACH	BCI	ADH	AFH	AGI	AEH	ADI	ACI	AEI	AGI	AGH
11.00	11.33	11.61	11.67	12.50	12.67	12.83	13.06	13.50	14.67	14.67	15.89	17.39	17.44	17.67	17.72	18.50	18.50	18.89	19.50

Table 34

Average Ranking of NWS Items made by Both Sexes
Main Pre-vocational Samples

Ranking for Grade Level 8

Highest Ranking

Item	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20
Ranking	38.0	39.0	1.0	29.0	22.0	43.0	28.0	8.0	21.0	24.0	30.5	42.0	25.0	54.0	36.0	14.0	51.0	15.0	60.0	33.0
Item	21	22	23	24	25	26	27	28	29	30	31	32	33	34	35	36	37	38	39	40
Ranking	47.0	50.0	52.0	56.5	19.5	55.0	4.5	56.5	12.5	37.0	49.0	18.0	11.0	12.5	3.0	59.0	4.5	45.0	41.0	10.0
Item	41	42	43	44	45	46	47	48	49	50	51	52	53	54	55	56	57	58	59	60
Ranking	53.0	44.0	34.5	40.0	46.0	7.0	16.0	9.0	34.5	32.0	17.0	48.0	19.5	58.0	26.0	6.0	30.5	2.0	27.0	23.0

Lowest Ranking

Ranking for Grade Level 9

Highest Ranking

Item	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20
Ranking	34.0	33.0	6.5	29.0	17.0	40.0	38.0	10.0	24.0	37.0	31.0	43.0	25.0	48.0	32.0	22.0	57.0	14.0	60.0	35.0
Item	21	22	23	24	25	26	27	28	29	30	31	32	33	34	35	36	37	38	39	40
Ranking	45.0	46.0	53.0	56.0	18.5	59.0	5.0	50.0	15.5	41.0	51.0	15.5	11.0	20.0	6.5	55.0	8.0	47.0	42.0	9.0
Item	41	42	43	44	45	46	47	48	49	50	51	52	53	54	55	56	57	58	59	60
Ranking	54.0	44.0	30.0	36.0	49.0	2.0	12.0	3.5	26.0	39.0	13.0	58.0	21.0	52.0	28.0	3.5	27.0	1.0	23.0	18.5

Lowest Ranking

Table 34 (cont'd)

Ranking for Grade Level 10

Highest Ranking

Item	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20
Ranking	39.0	38.0	8.0	24.0	15.5	40.0	41.0	9.0	27.0	26.0	33.0	43.0	30.0	46.0	32.0	12.0	53.0	15.5	58.0	36.5
Item	21	22	23	24	25	26	27	28	29	30	31	32	33	34	35	36	37	38	39	40
Ranking	42.0	44.0	51.0	57.0	19.0	55.0	2.5	50.0	17.5	36.5	56.0	7.0	17.5	20.0	10.0	52.0	6.0	47.5	47.5	11.0
Item	41	42	43	44	45	46	47	48	49	50	51	52	53	54	55	56	57	58	59	60
Ranking	59.0	45.0	31.0	35.0	49.0	5.0	13.0	4.0	28.0	34.0	14.0	54.0	22.0	60.0	29.0	2.5	25.0	1.0	23.0	21.0

Lowest Ranking

Ranking for Grade Level 11

Highest Ranking

Item	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20
Ranking	32.5	40.0	4.0	23.0	22.0	42.0	44.0	10.0	28.5	30.0	28.5	41.0	25.0	49.0	34.0	19.0	57.0	8.0	60.0	32.5
Item	21	22	23	24	25	26	27	28	29	30	31	32	33	34	35	36	37	38	39	40
Ranking	38.5	45.0	52.0	58.0	16.5	48.0	6.0	51.0	24.0	36.5	54.0	19.0	14.5	19.0	11.0	53.0	5.0	46.0	50.0	9.0
Item	41	42	43	44	45	46	47	48	49	50	51	52	53	54	55	56	57	58	59	60
Ranking	59.0	43.0	35.0	38.5	47.0	2.0	14.5	3.0	27.0	36.5	16.5	56.0	12.0	55.0	31.0	7.0	26.0	1.0	21.0	13.0

Lowest Ranking

Table 35

Average Ranking of NWS Items made by Both Sexes
Comparison Pre-vocational Samples

Ranking for Grade Level 8

Highest Ranking

Item	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20
Ranking	40.0	37.0	4.5	33.0	18.0	43.0	28.0	11.5	30.0	35.0	32.0	44.0	24.0	45.0	29.0	11.5	56.0	21.0	58.0	34.0
Item	21	22	23	24	25	26	27	28	29	30	31	32	33	34	35	36	37	38	39	40
Ranking	47.0	46.0	49.0	54.0	13.5	55.0	2.0	57.0	10.0	38.0	60.0	18.0	20.0	8.0	4.5	52.0	9.0	42.0	41.0	15.0
Item	41	42	43	44	45	46	47	48	49	50	51	52	53	54	55	56	57	58	59	60
Ranking	53.0	48.0	36.0	39.0	50.0	7.0	18.0	3.0	25.5	31.0	16.0	59.0	22.0	51.0	25.5	6.0	27.0	1.0	23.0	13.5

Lowest Ranking

Ranking for Grade Level 9

Highest Ranking

Item	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20
Ranking	25.5	37.0	6.0	34.0	22.5	46.5	33.0	13.0	21.0	40.5	31.5	43.0	16.5	51.0	38.0	25.0	60.0	10.0	59.0	31.5
Item	21	22	23	24	25	26	27	28	29	30	31	32	33	34	35	36	37	38	39	40
Ranking	42.0	44.0	54.0	53.0	18.0	48.5	2.0	50.0	25.0	22.5	58.0	19.5	16.5	11.0	13.0	55.0	6.0	46.5	45.0	13.0
Item	41	42	43	44	45	46	47	48	49	50	51	52	53	54	55	56	57	58	59	60
Ranking	56.0	39.0	36.0	40.5	48.5	8.0	9.0	1.0	30.0	35.0	15.0	52.0	25.0	57.0	19.5	4.0	27.0	3.0	28.5	6.0

Lowest Ranking

Table 35 (cont'd)

Ranking for Grade Level 10

Highest Ranking

Item	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20
Ranking	37.0	35.5	3.0	28.5	20.0	35.5	38.5	9.5	16.5	28.5	41.0	45.0	25.0	43.5	13.0	11.0	56.0	16.5	60.0	30.0
Item	21	22	23	24	25	26	27	28	29	30	31	32	33	34	35	36	37	38	39	40
Ranking	38.5	46.5	50.0	51.0	22.5	49.0	16.5	52.0	7.0	42.0	54.0	16.5	13.0	20.0	7.0	55.0	5.0	43.5	46.5	9.5
Item	41	42	43	44	45	46	47	48	49	50	51	52	53	54	55	56	57	58	59	60
Ranking	57.0	48.0	27.0	31.0	53.0	7.0	13.0	1.5	32.0	33.5	20.0	58.0	26.0	59.0	33.5	1.5	24.0	4.0	40.0	22.5

Lowest Ranking

Ranking for Grade Level 11

Highest Ranking

Item	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20
Ranking	39.0	31.5	2.5	27.0	19.0	42.0	44.0	9.0	21.5	35.0	29.5	43.0	28.0	45.0	33.0	12.0	58.5	19.0	60.0	35.0
Item	21	22	23	24	25	26	27	28	29	30	31	32	33	34	35	36	37	38	39	40
Ranking	41.0	40.0	48.0	58.5	9.0	49.0	5.5	57.0	17.0	37.0	53.0	13.0	24.0	21.5	7.0	50.0	4.0	54.5	51.0	11.0
Item	41	42	43	44	45	46	47	48	49	50	51	52	53	54	55	56	57	58	59	60
Ranking	56.0	46.0	25.0	38.0	47.0	9.0	15.0	1.0	26.0	35.0	15.0	52.0	19.0	54.5	31.5	5.5	23.0	2.5	29.5	15.0

Lowest Ranking

Table 36

Average Ranking of NWS Items made by Both Sexes
Industrial Arts and Home Economics Samples

Ranking for Grade Level 8

Highest Ranking

Item	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20
Ranking	41.0	39.0	2.0	27.5	16.0	42.0	32.0	8.0	24.0	36.0	27.5	45.0	35.0	44.0	33.0	11.5	60.0	15.0	58.0	38.0
Item	21	22	23	24	25	26	27	28	29	30	31	32	33	34	35	36	37	38	39	40
Ranking	43.0	49.5	51.0	55.0	13.0	54.0	5.5	49.5	22.0	34.0	52.0	17.0	21.0	10.0	4.0	56.0	5.5	48.0	40.0	14.0
Item	41	42	43	44	45	46	47	48	49	50	51	52	53	54	55	56	57	58	59	60
Ranking	53.0	46.0	31.0	37.0	47.0	11.5	19.0	7.0	29.0	25.0	9.0	57.0	19.0	59.0	30.0	3.0	23.0	1.0	26.0	19.0

Lowest Ranking

Ranking for Grade Level 9

Highest Ranking

Item	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20
Ranking	40.5	37.0	6.0	27.0	23.0	40.5	38.0	13.0	30.0	33.0	36.0	42.0	28.0	47.0	25.0	19.0	55.0	16.5	59.0	34.5
Item	21	22	23	24	25	26	27	28	29	30	31	32	33	34	35	36	37	38	39	40
Ranking	46.0	43.0	51.0	52.5	19.0	50.0	2.0	48.0	16.5	39.0	56.0	9.5	15.0	7.0	8.0	60.0	5.0	49.0	44.0	12.0
Item	41	42	43	44	45	46	47	48	49	50	51	52	53	54	55	56	57	58	59	60
Ranking	52.5	45.0	32.0	34.5	54.0	11.0	14.0	4.0	19.0	31.0	9.5	58.0	21.0	57.0	29.0	3.0	26.0	1.0	22.0	24.0

Lowest Ranking

Table 36 (cont'd)

Ranking for Grade Level 10

Highest Ranking

Item	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20
Ranking	34.5	33.0	1.0	37.0	16.0	42.0	38.0	6.0	29.0	25.0	19.5	44.0	31.0	50.0	26.0	22.5	52.5	10.0	60.0	36.0
Item	21	22	23	24	25	26	27	28	29	30	31	32	33	34	35	36	37	38	39	40
Ranking	43.0	45.5	56.5	51.0	17.0	48.5	8.5	56.5	24.0	40.0	58.5	13.0	19.5	14.0	6.0	54.0	4.0	40.0	48.5	12.0
Item	41	42	43	44	45	46	47	48	49	50	51	52	53	54	55	56	57	58	59	60
Ranking	55.0	47.0	32.0	30.0	45.5	6.0	11.0	8.5	34.5	40.0	18.0	52.5	22.5	58.5	28.0	3.0	27.0	2.0	15.0	21.0

Lowest Ranking

Ranking for Grade Level 11

Highest Ranking

Item	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20
Ranking	32.0	26.0	4.0	34.5	18.5	38.0	48.0	7.0	36.5	24.0	30.0	40.0	28.0	44.0	31.0	15.5	57.5	11.0	60.0	25.0
Item	21	22	23	24	25	26	27	28	29	30	31	32	33	34	35	36	37	38	39	40
Ranking	29.0	46.0	49.5	56.0	17.0	57.5	5.0	46.0	20.0	41.0	52.0	15.5	12.0	18.5	10.0	55.0	8.0	42.0	49.5	9.0
Item	41	42	43	44	45	46	47	48	49	50	51	52	53	54	55	56	57	58	59	60
Ranking	59.0	43.0	39.0	27.0	51.0	1.0	14.0	2.0	36.5	46.0	13.0	53.0	22.0	54.0	34.5	6.0	33.0	3.0	21.0	23.0

Lowest Ranking

Table 37

Average Ranking of NWS Items made by Both Sexes
Academic Samples

Ranking for Grade Level 9

Highest Ranking

Item	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20
Ranking	29.5	39.0	4.0	23.5	20.0	43.0	37.0	6.5	22.0	29.5	27.0	41.0	25.0	47.0	32.0	26.0	52.0	14.0	60.0	34.0
Item	21	22	23	24	25	26	27	28	29	30	31	32	33	34	35	36	37	38	39	40
Ranking	44.0	46.0	56.0	58.5	22.0	50.0	6.5	53.5	18.5	29.5	55.0	21.0	18.5	10.0	9.0	48.0	1.0	51.0	40.0	17.0
Item	41	42	43	44	45	46	47	48	49	50	51	52	53	54	55	56	57	58	59	60
Ranking	53.5	45.0	35.5	42.0	49.0	5.0	12.0	3.0	33.0	38.0	16.0	58.5	13.0	57.0	29.5	8.0	23.5	2.0	35.5	15.0

Lowest Ranking

Ranking for Grade Level 10

Highest Ranking

Item	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20
Ranking	35.0	34.0	8.0	36.0	16.0	48.0	33.0	4.5	23.5	32.0	31.0	48.0	25.5	53.0	38.5	20.0	58.0	17.5	59.0	37.0
Item	21	22	23	24	25	26	27	28	29	30	31	32	33	34	35	36	37	38	39	40
Ranking	44.5	38.5	57.0	54.5	19.0	48.0	1.0	41.0	14.0	40.0	54.5	12.0	13.0	15.0	10.0	52.0	2.0	44.5	44.5	10.0
Item	41	42	43	44	45	46	47	48	49	50	51	52	53	54	55	56	57	58	59	60
Ranking	44.5	50.0	30.0	28.0	42.0	3.0	22.0	7.0	28.0	51.0	28.0	60.0	10.0	56.0	21.0	6.0	25.5	4.5	23.5	17.5

Lowest Ranking

Table 37 (cont'd)

Ranking for Grade Level 11

Highest Ranking

Item	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20
Ranking	26.0	28.5	7.0	25.0	22.0	39.5	37.5	8.0	18.5	32.0	30.0	51.0	28.5	47.5	39.5	16.0	59.0	12.0	58.0	37.5
Item	21	22	23	24	25	26	27	28	29	30	31	32	33	34	35	36	37	38	39	40
Ranking	43.0	41.0	52.5	60.0	9.0	45.0	4.0	52.5	24.0	33.5	47.5	23.0	16.0	14.0	13.0	45.0	2.0	55.0	42.0	10.0
Item	41	42	43	44	45	46	47	48	49	50	51	52	53	54	55	56	57	58	59	60
Ranking	54.0	49.0	35.0	31.0	50.0	6.0	16.0	3.0	27.0	45.0	11.0	56.0	18.5	57.0	36.0	5.0	20.5	1.0	33.5	20.5

Lowest Ranking

APPENDIX E

NWS ITEMS RANKED AS MOST CHARACTERISTIC AND LEAST CHARACTERISTIC

Table 38

Grade Eight Baseline Data, Both Sexes
Foxtrap Junior High School and Holy Spirit School, Manuels

Ranking of Most Characteristic Items

Item No:	Cell	
		Highest Ranking
19	aei	It makes me feel important when people think I'm doing a good job.
36	aei	What I like about working is the people you meet.
54	afi	Working means that you help others and they help you.
28	aci	With the money you get from working, you can help support those dear to you.
24	agh	I find work satisfying because it makes me feel creative.
26	afh	The important thing about working is the friends you can make on the job.
14	adh	Life can get very boring, without some work to do.
41	adi	The big thing about working is that it gets you involved with other people.
23	agi	I find when I am working I get all sorts of new ideas from the people I work with.
17	aeh	Having a job makes you feel you're worth something.
22	adi	The people you work with make the time pass faster than the work you do.
		Lowest Ranking

Table 38 (cont'd)

Ranking of Least Characteristic Items

Item No:	Cell	Lowest Ranking
3	bei	What I dislike about working is the people you meet.
58	bdh	Work is boring.
35	bdi	When you work, you have to spend time with a lot of boring people.
27	bei	Working just makes me feel that I'm at the bottom of the heap or list.
37	beh	To have to work is to be forced to do what you don't want to do.
56	beh	Working just makes me feel like a cog in a machine.
46	bgh	If you have to work you just have to give up thinking.
8	bfh	You can't trust the people you work with.
48	bgh	Working just dulls the imagination.
40	bei	Working just puts you in contact with people who give you a hard time.
33	bfi	Work just means you're pleasing other people.

Highest Ranking

Table 39

Grade Nine Level Pre-Vocational (Decision Making)
Main Sample, Both Sexes
Holy Spirit School, Manuels, and Queen Elizabeth Regional High School

Ranking of Most Characteristic Items

Item No:	Cell	Highest Ranking
19	aei	It makes me feel important when people think I'm doing a good job.
26	afh	The important thing about working is the friends you can make on the job.
52	agh	Work gives me a chance to develop new ideas.
17	aeh	Having a job makes you feel you're worth something.
24	agh	I find work satisfying because it makes me feel creative.
36	aei	What I like about working is the people you meet.
41	adi	The big thing about working is that it gets you involved with other people.
23	agi	I find when I am working I get all sorts of new ideas from the people I work with.
54	afi	Working means that you help others and they help you.
31	afi	You can't expect people to support you all your life. You have to do something for them, too.
28	aci	With the money you get from working, you can help support those dear to you.

Lowest Ranking

Table 39 (cont'd)

Ranking of Least Characteristic Items

Item No:	Cell	
		Lowest Ranking
58	bdh	Work is boring.
46	bgh	If you have to work, you just have to give up thinking.
48	bgh	Working just dulls the imagination.
56	beh	Working just makes me feel like a cog in a machine.
27	bei	Working just makes me feel I'm at the bottom of the heap or list.
3	bei	What I dislike about working is the people you meet.
35	bdi	When you work you have to spend time with a lot of boring people.
37	beh	To have to work is to be forced to do what you don't want to do.
40	bei	Working just puts you in contact with people who give you a hard time.
8	bfh	You can't trust the people you work with.
33	bfi	Work just means you're pleasing other people.
		Highest Ranking

Table 40

Grade Ten Level Pre-Vocational (Decision Making)
Main Sample, Both Sexes

Holy Spirit School, Manuels and Queen Elizabeth Regional High School

Ranking of Most Characteristic Items

Item No:	Cell	Highest Ranking
54	afi	Working means that you help others and they help you.
41	adi	The big thing about working is that it gets you involved with other people.
19	aei	It makes me feel important when people think I'm doing a good job.
24	agh	I find work satisfying because it makes me feel creative.
31	afi	You can't expect people to support you all your life. You have to do something for them, too.
26	afh	The important thing about working is the friends you can make on the job.
52	agh	Work gives me a chance to develop new ideas.
17	aeh	Having a job makes you feel you're worth something.
36	aei	What I like about working is the people you meet.
23	agi	I find when I am working I get all sorts of new ideas from the people I work with.
28	aci	With the money you get from working, you can help support those dear to you.

Lowest Ranking

Table 40 (cont'd)

Ranking of Least Characteristic Items

Item No:	Cell		Lowest Ranking
58	bdh	Work is boring.	
27	bei	Working just makes me feel that I'm on the bottom of the heap or list.	
56	beh	Working just makes me feel like a cog in a machine.	
48	bgh	Working just dulls the imagination.	
46	bgh	If you have to work you just have to give up thinking.	
37	beh	To have to work is to be forced to do what you don't want to do.	
32	bfh	The trouble with working is that you have to be with people who care nothing about you.	
3	bei	What I dislike about working is the people you meet.	
8	bfh	You can't trust the people you have to work with.	
35	bdi	When you work you have to spend time with a lot of boring people.	
40	bei	Working just puts you into contact with people who give you a hard time.	
			Highest Ranking

Table 41

Grade Eleven Level Pre-Vocational (Decision Making)
Main Sample, Both Sexes

Holy Spirit School, Manuels and Queen Elizabeth Regional High School

Ranking of Most Characteristic Items

Item No:	Cell	Highest Ranking
19	aei	It makes me feel important when people think I'm doing a good job.
41	adi	The big thing about working is that it gets you involved with other people.
24	agh	I find work satisfying because it makes me feel creative.
17	aeh	Having a job makes you feel you're worth something.
52	agh	Work gives me a chance to develop new ideas.
54	afi	Working means that you help others and they help you.
31	afi	You can't expect people to support you all your life. You have to do something for them, too.
36	aei	What I like about working is the people you meet.
23	agi	I find when I am working I get all sorts of new ideas from the people I work with.
28	aci	With the money you can get from working, you can help support those dear to you.
39	aeh	It's a bad feeling to be completely dependent on others.

Lowest Ranking

Table 41 (cont'd)

Ranking of Least Characteristic Items

Item No:	Cell	Lowest Ranking
58	bdh	Work is boring.
46	bgh	If you have to work you just have to give up thinking.
48	bgh	Working just dulls the imagination.
3	bei	What I dislike about working is the people you meet.
37	beh	To have to work is to be forced to do what you don't want to do.
27	bei	Working just makes me feel that I'm on the bottom of the heap or list.
56	beh	Working just makes me feel like a cog in a machine.
18	bgi	When you work, they make you give up your own ideas.
40	bei	Working just puts you in contact with people who give you a hard time.
8	bfh	You can't trust the people you work with.
35	bdi	When you work you have to spend time with a lot of boring people.

Highest Ranking

Table 42

Grade Eight Baseline Data, Both Sexes
Most Holy Rosary Elementary School and Freshwater Elementary School

Ranking of Most Characteristic Items

Item No:	Cell	
		Highest Ranking
31	afi	You can't expect people to support you all your life. You have to do something for them, too.
52	agh	Work gives me the chance to develop new ideas.
19	aei	It makes me feel important when people think I'm doing a good job.
28	aci	With the money you get from working, you can help support those dear to you.
17	aeh	Having a job makes you feel you're worth something.
26	afh	The important thing about working is the friends you can make on the job.
24	agh	I find work satisfying because it makes me feel creative.
41	adi	The big thing about working is that it gets you involved with other people.
36	aei	What I like about working is the people you meet.
54	afi	Working means that you help others and they help you.
45	agi	Work is exciting because of the new ideas people have.
		Lowest Ranking

Table 42 (cont'd)

Ranking of Least Characteristic Items

Item No:	Cell	
		Lowest Ranking
58	bdh	Work is boring.
27	bei	Working just makes me feel that I'm on the bottom of the heap or list.
48	bgh	Working just dulls the imagination.
3	bei	What I dislike about working is the people you meet.
35	bdi	When you work you have to spend a lot of time with a lot of boring people.
56	beh	Working just makes me feel like a cog in a machine.
46	bgh	If you have to work you just have to give up thinking.
34	bch	The really lucky people are those who can live without working.
37	beh	To have to work is to be forced to do what you don't want to do.
29	bgh	Working just means doing the same things over and over again.
8	bfh	You can't trust the people you have to work with.
		Highest Ranking

Table 43

Grade Nine Level Pre-Vocational (Decision Making)
Comparison Sample, Both Sexes
Laval High School, Placentia

Ranking of Most Characteristic Items

Item No:	Cell	
		Highest Ranking
17	aeh	Having a job makes you feel you're worth something.
19	aei	It makes me feel important when people think I'm doing a good job.
31	afi	You can't expect people to support you all your life. You have to do something for them, too.
54	afi	Working means that you help others and they help you.
41	adi	The big thing about working is that it gets you involved with other people.
36	aei	What I like about working is the people you meet.
23	agi	I find when I am working I get all sorts of new ideas from the people I work with.
24	agh	I find work satisfying because it makes me feel creative.
52	agh	Work gives me a chance to develop new ideas.
14	adh	Life can get very boring without some work to do.
28	aci	With the money you get from working, you can help support those dear to you.
		Lowest Ranking

Table 43(cont'd)

Ranking of Least Characteristic Items

Item No:	Cell	Lowest Ranking
48	bgh	Working just dulls the imagination.
27	bei	Working just makes me feel that I'm on the bottom of the heap or list.
58	bdh	Work is boring.
56	beh	Working just makes me feel like a cog in a machine.
3	bei	What I dislike about working is the people you meet.
37	beh	To have to work is to be forced to do what you don't want to do.
60	bch	If I could make a living without working I'd grab the chance.
46	bgh	If you have to work you just have to give up thinking.
47	bgi	To work means to be forced into a rut by other people.
18	bgi	When you work, they make you give up your own ideas.
34	bch	The really lucky people are those who can live without working.

Highest Ranking

Table 44

Grade Ten Level Pre-Vocational (Decision Making)
Comparison Sample, Both Sexes
Laval High School, Placentia

Ranking of Most Characteristic Items

Item No:	Cell	Highest Ranking
19	aei	It makes me feel important when people think I'm doing a good job.
54	afi	Working means that you help others and they help you.
52	agh	Work gives me a chance to develop new ideas.
41	adi	The big think about working is that it gets you involved with other people.
17	aeh	Having a job makes you feel you're worth something.
36	aei	What I like about working is the people you meet.
31	afi	You can't expect people to support you all your life. You have to do something for them, too.
45	agi	Work is exciting because of the new ideas people have.
28	aci	With the money you get from working, you can help support those dear to you.
24	agh	I find work satisfying because it makes me feel creative.
23	agi	I find when I am working I get all sorts of new ideas from the people I work with.

Lowest Ranking

Table 44 (cont'd)

Ranking of Least Characteristic Items

Item No:	Cell	
		Lowest Ranking
48	bgh	Working just dulls the imagination.
56	beh	Working just makes me feel like a cog in a machine.
3	bei	What I dislike about working is the people you meet.
58	bdh	Work is boring.
37	beh	To have to work is to be forced to do what you don't want to do.
29	bgh	Working just means doing the same things over and over again.
35	bdi	When you work, you have to spend a lot of time with a lot of boring people.
46	bgh	If you have to work, you just have to give up thinking.
8	bfh	You can't trust the people you have to work with.
40	bei	Working just puts you in contact with people who give you a hard time.
16	bdh	Working keeps you tied down.
		Highest Ranking

Table 45

Grade Eleven Level Pre-Vocational (Decision Making)
Comparison Sample, Both Sexes
Laval High School, Placentia

Ranking of Most Characteristic Items

Item No:	Cell	Highest Ranking
19	aei	It makes me feel important when people think I'm doing a good job.
24	agh	I find work satisfying because it makes me feel creative.
17	aeh	Having a job makes you feel you're worth something.
28	aci	With the money you get from working, you can help support those dear to you.
41	adi	The big thing about working is it gets you involved with other people.
54	afi	Working means that you help others and they help you.
38	agh	If I didn't work, I would feel I am creating nothing.
31	afi	You can't expect people to support you all your life. You have to do something for them, too.
52	agh	Work gives me the chance to develop new ideas.
39	aeh	It's a bad feeling to be completely dependent on others.
36	aei	What I like about working is the people you meet.

Lowest Ranking

Table 45 (cont'd)

Ranking of Least Characteristic Items

Item No:	Cell		Lowest Ranking
48	bgh	Working just dulls the imagination.	
3	bei	What I dislike about working is the people you meet.	
58	bdh	Work is boring.	
37	beh	To have to work is to be forced to do what you don't want to do.	
27	bei	Working just makes me feel that I'm at the bottom of the heap or list.	
56	beh	Working just makes me feel like a cog in a machine.	
35	bdi	When you work, you have to spend time with a lot of boring people.	
8	bfh	You can't trust the people you have to work with.	
25	bci	I'd rather not raise a family, if I had to work all my life to do it.	
46	bgh	If you have to work you just have to give up thinking.	
40	bei	Working just puts you in contact with people who give you a hard time.	
			Highest Ranking

Table 46

Grade Eight Baseline Data Industrial Arts and Home Economics (Exploratory), Both Sexes

Partanna Academy, John Burke Regional High School and Central High School, Marystown

Ranking of Most Characteristic Items

Item No:	Cell	
		Highest Ranking
17	aeh	Having a job makes you feel you're worth something.
54	afi	Working means that you help others and they help you.
19	aei	It makes me feel important when people think I'm doing a good job.
52	agh	Work gives me a chance to develop new ideas.
36	aei	What I like about working is the people you meet.
24	agh	I find work satisfying because it makes me feel creative.
26	afh	The important thing about working is the friends you can make on the job.
41	adh	The big thing about working is that it gets you involved with other people.
31	afi	You can't expect people to support you all your life. You have to do something for them, too.
23	agi	I find when I am working I get all sorts of new ideas from the people I work with.
28	aci	With the money you get from working, you can help support those dear to you.
		Lowest Ranking

Table 46 (cont'd)

Ranking of Least Characteristic Items

Item No:	Cell	
		Lowest Ranking
58	bdh	Work is boring.
3	bei	What I dislike about working is the people you meet.
56	beh	Working just makes me feel like a cog in a machine.
35	bdi	When you work, you have to spend time with a lot of boring people.
27	bei	Working just makes me feel that I'm on the bottom of the heap or list.
37	beh	To have to work is to be forced to do what you don't want to do.
48	bgh	Working just dulls the imagination.
8	bfh	You can't trust people you have to work with.
51	bci	I work hard enough for my money, without having to support a bunch of other people.
34	bch	The really lucky people are those who can live without working.
16	bdh	Working keeps you tied down.
		Highest Ranking

Table 47

Grade Nine Level Industrial Arts and Home Economics (Exploratory), Both Sexes

Partanna Academy, John Burke Regional High School and Central High School, Marystown

Ranking of Most Characteristic Items

Item No:	Cell	Highest Ranking
36	aei	What I like about working is the people you meet.
19	aei	It makes me feel important when people think I'm doing a good job.
52	agh	Work gives me a chance to develop new ideas.
54	afi	Working means that you help others and they help you.
31	afi	You can't expect people to support you all your life. You have to do something for them, too.
17	aeh	Having a job makes you feel you're worth something.
45	agi	Work is exciting because of the new ideas people have.
41	adi	The big thing about working is that it gets you involved with other people.
24	agh	I find work satisfying because it makes me feel creative.
23	agi	I find when I am working I get all sorts of new ideas from the people I work with.
26	afh	The important thing about working is the friends you can make on the job.

Lowest Ranking

Table 47 (cont'd)

Ranking of Least Characteristic Items

Item No:	Cell	
		Lowest Ranking
58	bdh	Work is boring.
27	bei	Working just makes me feel that I'm on the bottom of the heap or list.
56	beh	Working just makes me feel like a cog in a machine.
48	bgh	Working just dulls the imagination.
37	beh	To have to work is to be forced to do what you don't want to do.
3	bei	What I dislike about working is the people you meet.
34	bch	The really lucky people are those who can live without working.
35	bdi	When you work, you have to spend time with a lot of boring people.
32	bfh	The trouble with working is that you have to be with people who care nothing about you.
51	bci	I work hard enough for my money, without having to support a bunch of other people.
46	bgh	If you have no work you just have to give up thinking.
		Highest Ranking

Table 48

Grade Ten Level Industrial Arts and Home Economics (Exploratory), Both Sexes

Partanna Academy, John Burke Regional High School and Central High School, Marystown

Ranking of Most Characteristic Items

Item No:	Cell	
		Highest Ranking
19	aei	It makes me feel important when people think I'm doing a good job.
54	afi	Working means that you help others and they help you.
31	afi	You can't expect people to support you all your life. You have to do something for them, too.
28	aci	With the money you get from working, you can help support those dear to you.
23	agi	I find when I am working I get all sorts of new ideas from the people I work with.
41	adi	The big thing about working is that it gets you involved with other people.
36	aei	What I like about working is the people you meet.
52	agh	Work gives me a chance to develop new ideas.
17	aeh	Having a job makes you feel you're worth something.
24	agh	I find work satisfying because it makes me feel creative.
14	adh	Life can get very boring without some work to do.
		Lowest Ranking

Table 48 (cont'd)

Ranking of Least Characteristic items

Item No:	Cell	Lowest Ranking
3	bei	What I dislike about working is the people you meet.
58	bdh	Work is boring.
56	beh	Working just makes me feel like a cog in a machine.
37	beh	To have to work is to be forced to do something you don't want to do.
8	bfh	You can't trust people you have to work with.
35	bdi	When you work you have to spend time with a lot of boring people.
46	bgh	If you have to work you just have to give up thinking.
27	bei	Working just makes me feel that I'm on the bottom of the heap or list.
48	bgh	Working just dulls the imagination.
18	bgi	When you work, they make you give up your own ideas.
47	bgi	To work means to be forced into a rut by other people.

Highest Ranking

Table 49

Grade Eleven Level Industrial Arts and Home Economics (Exploratory), Both Sexes

Partanna Academy, John Burke Regional High School and Central High School, Marystown

Ranking of Most Characteristic Items

Item No:	Cell	
		Highest Ranking
19	aei	It makes me feel important when people think I'm doing a good job.
41	adi	The big thing about working is that it gets you involved with other people.
26	afh	The important thing about working is the friends you can make on the job.
17	aeh	Having a job makes you feel you're worth something.
24	agh	I find work satisfying because it makes me feel creative.
36	aei	What I like about working is the people you meet.
54	afi	Working means that you help others and they help you.
52	agh	Work gives me a chance to develop new ideas.
31	afi	You can't expect people to support you all your life. You have to do something for them, too.
45	agi	Work is exciting because of the new ideas people have.
39	aeh	It's a bad feeling to be wholly dependent on others.
		Lowest Ranking

Table 49 (cont'd)

Ranking of Least Characteristic Items

Item No:	Cell	Lowest Ranking
46	bgh	If you have to work you just have to give up thinking.
48	bgh	Working just dulls the imagination.
58	bdh	Work is boring.
3	bei	What I dislike about working is the people you meet.
27	bei	Working just makes me feel that I'm at the bottom of the heap or list.
56	beh	Working just makes me feel like a cog in a machine.
8	bfh	You can't trust people you have to work with.
37	beh	To have to work is to be forced to do what you don't want to do.
40	bei	Working just puts you in contact with people who give you a hard time.
35	bdi	When you work, you have to spend time with a lot of boring people.
18	bgi	When you work, they make you give up your own ideas.

Highest Ranking

Table 50

Grade Nine Level: Academic Program
Control Sample, Both Sexes

Ranking of Most Characteristic Items

Item No:	Cell	
		Highest Ranking
19	aei	It makes me feel important when people think I'm doing a good job.
52	agh	Work gives me a chance to develop new ideas.
24	agh	I find work satisfying because it makes me feel creative.
54	afi	Working means that you help others and they help you.
23	agi	I find when I am working I get all sorts of new ideas from the people I work with.
31	afi	You can't expect people to support you all your life. You have to do something for them, too.
41	adi	The big thing about working is that it gets you involved with other people.
28	aci	With the money you get from working, you can help support those dear to you.
17	aeh	Having a job makes you feel you're worth something.
38	agh	If I didn't work, I would feel I am creating nothing.
26	afh	The important thing about working is the friends you can make on the job.
		Lowest Ranking

Table 50 (cont'd)

Ranking of Least Characteristic Items

Item No:	Cell	Lowest Ranking
37	beh	To have to work is to be forced to do what you don't want to do.
58	bdh	Work is boring.
48	bgh	Working just dulls the imagination.
3	bei	What I dislike about working is the people you meet.
46	bgh	If you have to work, you just have to give up thinking.
8	bfh	You can't trust people you have to work with.
27	bei	Working just makes me feel I'm at the bottom of the heap or list.
56	beh	Working just makes me feel like a cog in a machine.
35	bdi	When you work, you have to spend time with a lot of boring people.
34	bch	The really lucky people are those who can live without working.
25	bci	I'd rather not raise a family, if I had to work all my life to do it.

Highest Ranking

Table 51

Grade Ten Level: Academic Program
Control Sample, Both Sexes

Ranking of Most Characteristic Items

Item No:	Cell	
		Highest Ranking
52	agh	Work gives me the chance to develop new ideas.
19	aei	It makes me feel important when people think I'm doing a good job.
17	aeh	Having a job makes you feel you're worth something.
23	agi	I find when I am working I get all sorts of new ideas from the people I work with.
54	afi	Working means that you help others and they help you.
31	afi	You can't expect people to support you all your life. You have to do something for them, too.
24	agh	I find work satisfying because it makes me feel creative.
14	adh	Life can get very boring without some work to do.
36	aei	What I like about working is the people you meet.
50	bci	I'm not interested in working just because other people want me to.
42	aci	The money you get from working enables you to do things for other people.
		Lowest Ranking

Table 51 (cont'd)

Ranking of Least Characteristic Items

Item No:	Cell	Lowest Ranking
27	bei	Working just makes me feel I'm on the bottom of the heap or list.
37	beh	To have to work is to be forced to do what you don't want to do.
46	bgh	If you have to work, you just have to give up thinking.
8	bfh	You can't trust people you have to work with.
58	bdh	Work is boring.
56	bgh	Working just makes me feel like a cog in a machine.
48	bgh	Working just dulls the imagination.
3	bei	What I dislike about working is the people you meet.
35	bdi	When you work, you have to spend time with a lot of boring people.
40	bei	Working just puts you into contact with people who give you a hard time.
53	bch	If somebody gave you the same amount of money as you could make, there would be no point in working.

Highest Ranking

Table 52

Grade Eleven Level: Academic Program
Control Sample, Both Sexes

Ranking of Most Characteristic Items

Item No:	Cell		Highest Ranking
24	agh	I find work satisfying because it makes me feel creative.	
17	aeh	Having a job makes you feel you're worth something.	
19	aei	It makes me feel important when people think I'm doing a good job.	
54	afi	Working means that you help others and they help you.	
52	agh	Work gives me a chance to develop new ideas.	
38	agh	If I didn't work, I would feel I am creating nothing.	
41	adi	The big thing about working is that it gets you involved with other people.	
28	aci	With the money you get from working, you can help support those dear to you.	
23	agi	I find when I am working I get all sorts of new ideas from the people I work with.	
12	afh	People respect you if you have a job.	
45	agi	Work is exciting because of the new ideas people have.	Lowest Ranking

Table 52 (cont'd)

Ranking of Least Characteristic Items

Item No:	Cell	
		Lowest Ranking
58	bdh	Work is boring.
37	beh	To have to work is to be forced to do what you don't want to do.
48	bgh	Working just dulls the imagination.
27	bei	Working just makes me feel I'm at the bottom of the heap or list.
56	beh	Working just makes me feel like a cog in a machine.
46	bgh	If you have to work, you just have to give up thinking.
3	bei	What I dislike about working is the people you meet.
8	bfh	You can't trust people you have to work with.
25	bci	I'd rather not raise a family, if I had to work all my life to do it.
40	bei	Working just puts you into contact with people who give you a hard time.
50	bci	I'm not interested in working just because other people want me to.
		Highest Ranking

APPENDIX F

TEST-RETEST RELIABILITY

Table 53

Average Ranking of NWS Items Test-Retest Reliability
Grade Eight Level Sample

Ranking for Initial Test

Highest Ranking

Item	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20
Ranking	1.0	33.0	36.5	7.5	32.0	26.0	40.0	42.5	7.5	39.0	29.5	24.0	41.0	23.0	44.5	27.0	15.5	58.0	9.0	60.0
Item	21	22	23	24	25	26	27	28	29	30	31	32	33	34	35	36	37	38	39	40
Ranking	34.0	46.5	42.5	53.0	56.0	22.0	48.0	4.0	54.5	11.5	25.0	59.0	18.5	20.5	11.5	13.0	51.0	10.0	37.5	46.5
Item	41	42	43	44	45	46	47	48	49	50	51	52	53	54	55	56	57	58	59	60
Ranking	14.0	49.0	57.0	36.0	35.0	50.0	3.0	30.5	5.0	31.0	44.5	18.5	54.5	17.0	52.0	28.0	6.0	29.5	2.0	15.5

Lowest Ranking

Ranking for Re-Test

Highest Ranking

Item	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20
Ranking	1.0	31.5	30.0	10.5	27.0	22.0	40.0	41.0	14.5	36.0	33.0	24.0	42.0	31.5	51.0	25.0	18.5	59.0	7.0	60.0
Item	21	22	23	24	25	26	27	28	29	30	31	32	33	34	35	36	37	38	39	40
Ranking	35.0	45.0	49.5	48.0	55.0	14.5	45.0	5.0	54.0	18.5	38.0	58.0	13.0	20.5	10.5	8.0	52.0	6.0	43.0	53.0
Item	41	42	43	44	45	46	47	48	49	50	51	52	53	54	55	56	57	58	59	60
Ranking	12.0	49.5	47.0	34.0	37.0	45.0	2.0	20.5	3.0	29.0	39.0	17.0	57.0	16.0	56.0	28.0	9.0	26.0	4.0	23.0

Lowest Ranking

END

2 0 0 4 8 2

FIN