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EDUCATIONAL VALUES: INTRINSIC OR EXTRINSIC
A Study of Parent Pupil Preferences

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INTRODUCTION

A perennial problem faced by teachers, administrators and educational researchers is that of improving the performance levels of high school pupils. Efforts to understand some of the factors which contribute to scholastic achievement have established correlations between performance levels and a variety of physical, emotional, psychological and cultural conditions. As well, over the last fifteen years a great deal of work has been concentrated on cultural influences upon school achievement and recently the concept of cultural difference has been found useful in predicting to differential levels of achievement. Cultural difference has been applied to differences in life styles within as well as between ethnic groups. Cultural anthropologists have drawn attention to the existence of subcultures which cut across ethnic lines and may have economic or regional origins. It is possible, for example, to speak of 'urban' vs. 'rural' culture and similarly to speak of the 'culture of poverty'.

The cultural differences observed are variations of the collectively shared values which characterize the national culture. The national culture into which one is socialized from birth provides its members with beliefs about acceptable goals. The belief system inherent in

a national culture is reflected in the music, drama, literature, religion, law, politics, commerce, in short, every aspect of social behaviour. In a modern society the belief system is more universally available principally because of the pervasive influence of the mass media.

However, despite naturally accepted cultural norms there is considerable variation in individual behaviour. Apparently between cultural norms and their behavioural manifestations there intercedes the individual and sub-cultural interpretations of social values. Attitudes or personal valuation modes may constitute the interface between the enforcement of universals and the acting out of particulars. To illustrate, the number of books in the home is known to correlate with SES and scholastic achievement level. Their presence may be the result of a mental set toward books and even though an appreciation of the value of books is part of the national culture, it is the interpretation of that value at a subcultural level which determines how much effort and interest is devoted to buying, borrowing and reading books. If this is so, then value interpretations, or evaluative styles, may be the critical determinants of subcultural differences and it should follow that alleviating some of the negative effects of cultural difference would be easier if evaluative styles were better understood.

Accordingly the present study is devoted to this end and the thrust of the argument upon which it is predicated holds that attitudes

toward education are culturally based but that cultural values are individually interpreted according to either of two valuation modes: instrumental or terminal. Attention will be devoted to determining the manner, as well as the degree, to which social objects are valued.

There is already considerable research to indicate a significant relationship between positive attitudes toward education and school achievement levels. However, there is relatively little research into the nature of valuation, or into the relationship between attitudes toward education and the established cultural norms.

Just as studies of cognitive style have gone beyond the correlation of intelligence with achievement, it is proposed that evaluative style, or mode, can go beyond the correlation of educational attitudes with achievement.

The approach to be used is in accord with the position taken by Meehan in his analysis of explanation in social science (1968). Meehan, taking a stance similar to Popper, argues for the viability of theory falsification as the most efficient route to explanation. This approach is contrary to that employed in deductive analysis and consequently does not purport to provide universally valid truths. For this reason the present study attempts only to test a theory about the way in which valuation mode affects the scholastic performance of a select set of New Zealand Fourth Form pupils. If the hypothesis holds up under the specified conditions the outcome will provide at least a rationale for

intervention in the immediate situation and the proposition that its generalizability merits test.

The presentation has been organized so that Chapter I is concerned with questions of cultural norms of value orientations. Chapter II considers the relevant research. Chapter III elaborates a research model appropriate to the empirical investigation of the nature of educational attitudes. Chapter IV describes the development of the measurement instrument and the general methodological procedures employed. Chapter V presents the findings and Chapter VI discusses the implications of the findings.

CHAPTER I

Toward a Model of Educational Valuation

The purpose of this chapter is to delineate the complex nature of the concepts involved in a study of attitudes and values and attempt to achieve a parsimonious delimitation. To fulfill this intention it will be necessary to: i. describe the conceptual framework on which this study has drawn. ii. explain the concept of valuation being used. iii. propose a model of social rewards based upon exchange theory.

Conceptual Framework

The word "attitude" tends to focus attention upon the individual and his mental set or preparedness to react to the world around him. This is not surprising since many definitions of attitude refer to the individual. For example two of the most influential definitions, according to Newcomb (1964), are: "An attitude can be defined as an enduring organization of motivational, emotional, perceptual and cognitive processes with respect to some aspect of the individual's world." (Krech and Crutchfield 1948), and, "An attitude is a mental and neural state of readiness, organized through experience, exerting a directive or dynamic influence upon the individual's response to all objects and situations with which it is related", (Allport 1935).

However, many sociologists, following Thomas and Znaniecki (1927) have viewed attitudes primarily in the context of social value which they define as "any datum having an empirical content accessible to the members of some social group and a meaning with regard to which it is or may be an object of activity". Attitudes and values are often viewed by sociologists as interdependent. For the purpose of this study the utility of the inter-relatedness of values and attitudes is recognized and the following definition is accepted: "a value is an attitude which is dominated by the individual's interpretation of the stimulus object's worth to him in the light of his goals." (Cooper and McGaugh 1966).

A common thread running through these definitions of attitude is the idea that attitudes represent the way in which people orient themselves to the world. At this point it is important to note that our world is primarily experienced in social settings. Man as a social creature functions primarily in organized groups from the smallest unit, the family, to the largest unit, the nation, (or possibly groups of nations). Social influence or culture thus becomes a pervasive force profoundly influencing the development of attitudes, values and belief systems. Culture which constitutes a storehouse of pooled learning serves to determine acceptable ways of thinking, feeling and believing. Culture in this sense is: "an interdependent system based upon linked premises and categories whose influence is greater rather than less because they are seldom put in words." (Kluckhohn 1949).

Cultural systems characterize societies and regardless of the range of variation of subcultures all members of a society concur in certain universals. (Linton 1936). Central to a cultural system are the socially approved norms which according to Merton, (1957) are manifested through the social structure in the form of culturally established and collectively held goals and means.

This implies that every socially structured society may be characterized by the end states judged desirable and the legitimized ways of goal attainment; New Zealand should be no exception. If this is so, in order to discuss educational values and attitudes in New Zealand some effort must first be made to identify the collectively shared goals and means of this society.

There is reason to believe that New Zealand shares many of the common features of other modern Western nations. In terms of the social and economic structure underlying ideology, New Zealand is one of the most advanced of fifty Western countries. (Buck and Jacobson 1968). Advanced societies tend to be associational societies characterized by both role specialization and role depersonalization. In such societies personal identity comes to be centred around the economic or occupational role, and in turn the occupational role determines economic rewards and social prestige, the correlates of personal identity.

The constraints of roles and reward structures in modern western nations operate in conjunction with the established cultural values (e.g. individualism, scientific rationalism, ambition, and acquisition) to produce an image of approved success goals. Status, prestige,

wealth and power, these are the correlates of success in the Western world. That such success is not only culturally approved but morally sanctioned requires little proof. There are innumerable studies revealing social stratification and ranking according to occupation, education and income. Likewise there are sociological justifications for social stratification (Davis 1945), and we need turn only to Weber (1930) to examine the moral basis for the acquisitive motive. It seems safe to accept wealth, power and prestige as culturally approved life goals in our society.

Merton suggests that the social structure provides both the goals and the means. But he finds in American society a discrepancy between the social emphasis on material success and the failure to emphasize the legitimate means of attaining this goal. The result of this discrepancy, Merton believes, is anomie which in turn leads to deviancy.

A comparison of the American and the English system of upward mobility may shed some light upon New Zealand attitudes toward the legitimate means of goal attainment, e.g. education. This comparison is convincingly portrayed by Ralph H. Turner (1960) in an article titled "Sponsored and Contest Mobility and the School System". According to Turner, one of the accepted functions of any school system is to provide a means for upward mobility. To meet the requirements for skilled personnel both in government and industry, schools are allotted the task of sorting out and preparing those capable of replenishing the ranks of the managerial and professional class.

Turner labels the English system a sponsorship system because upward mobility is likened to entry into a private club where each candidate must be sponsored by one or more members. New entrants to the club must possess certain credentials in the form of special skills such as intellectual, literary, or artistic excellencies, which can be appraised only by those trained to appreciate them. Under sponsored mobility early selection of only the number of persons necessary to fill anticipated vacancies in the elite strata is desirable.

In contrast, the contest system allows society at large to determine the criteria of elite status. The credentials which identify membership need to be highly visible, e.g. material possessions and mass popularity. The manner in which these credentials are obtained is not prescribed and the contest is open to all.

Where does New Zealand fit in this comparison of the two systems? In New Zealand the examination system still provides an essential selection criteria, but the examination comes when children are approximately fifteen years old. Thus everyone stays in the contest longer than is the case in England. Whereas English children attend a number of different types of post-primary schools (grammar, technical, secondary modern, and comprehensive schools) most New Zealand children attend the same type of high school. But those who pass the School Certificate examinations are sponsored in the direction of further education at university or teachers colleges. Those who fail may try again, or go out into the work force. For those who pass university

entrance examinations there are bursaries; for those enrolled at teachers colleges there are salaries. These remunerations may be regarded as forms of sponsorship.

Other characteristics of the sponsorship system concern curriculum content and the deployment of resources. In nineteenth century England classical studies were essential for the education of a "gentleman", and until recently finances were generally concentrated on developing the talents of those who could most benefit from higher education, e.g. the intellectually competent.

In New Zealand these trends have not entirely disappeared. It is still tacitly understood that a course which includes Latin and French is more highly rated than a more practical or vocationally oriented course of study. Likewise the best teachers and equipment have traditionally been allotted to the most advanced pupils.

To summarize, the New Zealand system of education shares some features of both contest and sponsored mobility systems but, withal clearly demonstrates the importance of education as a means of achieving culturally approved success goals.

Because secondary schools in New Zealand have traditionally been mainly concerned with preparing children to pass the School Certificate examinations, and because these examinations come at the end of the compulsory school period and thus affect all pupils, it seems possible to assert that the value of education can be taken as an organizing norm. Education is not only accepted as important in the life of the

individual, but also in the economy of the nation as a whole. A significant proportion of the national budget is devoted to education. Occupations which require a high level of education receive both financial rewards and social prestige. For any but the most menial tasks employers enquire after the educational attainments of the job applicants. Therefore, it can be argued that the whole population has been initiated into a cognitive awareness of the need for successful examination performance in upward mobility.

To summarize, the present study draws upon the ideas of Merton, who argues that the social structure provides culturally approved and collectively held goals and means which fundamentally influence the attitudes and values of individual members of society. In New Zealand these goals may be loosely interpreted as success in terms of occupational status and economic rewards. The legitimate means by which these goals are attainable is generally acknowledged to be through academic achievement as determined by examinations.

The valuation process

Having discussed the existence of cultural values, it is necessary to move on to a consideration of the process of valuation. It is a process of orientation which determines action or behaviour in specific situations. Value orientations can as well be called attitudes or dispositions toward the selection and rejection of socially significant

objects or events on the basis of their positive or negative value to the actor for the satisfaction of drives. This tendency to react positively or negatively to objects is what Parsons and Shils (1959) describe as the cathectic mode of orientation, and it lies at the root of the selective nature of action. Simply stated, the cathectic mode of orientation is a valuation process.

The subject of valuation is given exhaustive treatment by C.I. Lewis in his book, Analysis of Knowledge and Valuation (1946). For the purposes of this study it is only necessary to refer to Chapter XII, Sections 8 to 11. In these sections Lewis elaborates his classification of value orientations. The thrust of his argument concerns the essentially dual nature of valuation. Lewis sees two categories according to which objects are valued: extrinsic and intrinsic. An object is either intrinsically valuable, valuable for its own sake, immediately and unmistakably; or alternatively, it is extrinsically valuable, valuable because of its contribution to the realization of a future goal. To quote Lewis: "The intrinsically valuable is usually described as that which is good in itself, or good for its own sake; the extrinsically valuable as that which has value as instrumental to something else. It is usually understood that, in particular instances a thing may have value in both of these senses; but that never-the-less the intrinsic value of it and its extrinsic value remain distinct." (p.382).

The extrinsic/intrinsic classification of valuation objects, while not the only available in discussions of valuation, conforms in spirit with others which recognize the same dichotomy between the value which

resides in the object and the value obtained through the object. Other examples of similar classification systems are: "essential and operational values" (Golightly 1948), "actual and potential values" (Perry 1949) "asserted and operating values" (The Cornell Value Study Group 1949) these are as reported by Kluckhohn et al. (1959).

A Model of Cathectic Selection

The present study is concerned with attitudes toward education, specifically the manner in which education is valued. Attitudes and values may be described in terms of the cathectic orientations which determine action. Since organized education takes place in social settings it may be assumed that within these settings there are objects to which individuals respond selectively. Furthermore selection is made possible by cognitive discriminations among the objects which are experienced as having either positive or negative value to the actor. This tendency to react positively or negatively to objects (cathexis, to Parsons) is the attachment to objects which are gratifying and the rejection of those which are obnoxious. For the purpose of assessing the character of the stimulus object it would be helpful to identify and dimensionalize the social objects characteristic of educational settings. Satisfactory for this purpose are the three "commodities" formulated by R.S. Adams (1971) in his analysis of behaviour in social systems. His adaptation of exchange theory permits a parsimonious reward system to be derived which allows for the identification of

three social objects capable of stimulating cathexis.

Adam's variant of exchange theory predicates that within social systems members engage in an exchange of "Commodities". These "commodities", which are manifested in behavioural terms, may be classified according to three categories: Status, Utility, and Affect. Status implies rank or recognition and is characterized by deference or respect. Utility implies usefulness, material advantage or profit. Affect implies affection, care, warmth of feeling. Every social system, it is argued, has procedures by which Status, Utility and Affect are given or denied. Status, Utility and Affect can be considered as primarily gratificatory in nature and as such they constitute a tripartite reward structure operating in social settings. Such a reward structure appears likely to be useful as a basis for a systematic dimensionalization of valuation in educational systems.

Discussion

In summary, this chapter has presented a conceptualization of attitudes as reflecting the culturally endorsed value system of a society. The process of valuation has been described as the acceptance or rejection of objects in accordance with the gratificatory rewards which they afford the actor either intrinsically or extrinsically. And, finally, it has been suggested that by interpreting the three commodities fundamental to exchange theory as objects of cathectic orientation a structured analysis of educational values will be possible.

CHAPTER II

A Critique of the Relevant Literature

It is the intention of this chapter to fit the current investigation into the context of earlier, related studies. The chapter is arranged in three sections: i). a survey of the current literature on attitudes to education; ii). a criticism of the purpose and methodology typical of most relevant research; iii). a discussion of an alternative approach to the study of educational attitudes.

It is worth noting in passing that in the area of attitudes and values relatively few offerings are available under the rubric of educational research. Apparently Allport's (1954) contention that the scientific study of attitudes is the domain of social psychology still holds true.

The research reviewed falls roughly into four categories:

- i). studies of the relationship between attitudes and achievement;
- ii). studies of the relationship between attitudes and social class factors;
- iii). studies of the nature of attitudes and values;
- iv). an assessment of attitude measurement techniques. These four categories determine the organization of the chapter.

A basic criticism which applies to most of the studies reviewed is that the concepts are narrowly defined. Although purporting to deal with educational attitudes, most of the studies have attempted to measure attitudes toward specific aspects of schooling rather than attitudes toward education as a global concept.

Attitudes and Achievement

In the effort to find correlations between attitude and achievement researchers have measured attitudes toward educational aspirations (Kahl 1953), occupational aspirations (Simpson 1962) (Empey 1956), specific curriculum activities (Sharples 1969), aspects of school and school work (Lunn 1968), self, family and school (Baraheni 1962) attitude toward school, (Alvord 1972) (Pitt 1956), parental attitudes (Cohen 1965), and satisfaction with school (Jackson 1959) (Tenenbaum 1944) and Arvidson (1956).

Several attempts have been made to synthesize the results of submeasures of different attitudes. Diodrich and Jackson (1969) used a sixty item Student Opinion Poll to elicit responses concerning attitudes toward four different aspects of school life; teacher, curriculum, student body and classroom procedures. Similarly, Harrison (1968) used three attitudinal scales: attitude to the environment, attitude toward education and attitude toward formal and informal school groups. A Guttman type attitude questionnaire composed of four independent scales: liking for school, interest in

specific subjects, education and life goals, and education and personality development was employed by Kniveton (1969). However, it appears that a synthesis of subscores does not yield a necessarily valid global indication of educational attitudes because, as Kniveton found, pupils who score high on one scale do not always score high on all the others.

The evidence concerning the nature of the relationship between attitudes and school achievement that has resulted from attempts to measure attitudes toward different aspects of the educational process is inconclusive and even contradictory. Some studies, Evans (1965) Hieronymous (1951) Levin (1965) Bloom (1965) and Alvord (1965) have found significant positive correlations between attitudes toward schooling and academic achievement. But, a number of other researchers have concluded that there is no basis for believing that attitudes toward education distinguish the successful from the unsuccessful student. (Harrison 1968) (Arvidson 1956) (Tenenbaum 1944) (Diedrich 1969) (Jackson and Getzels 1959).

In only one notable respect is there some agreement: with increasing years, attitudes toward school become less positive for both the achiever and the non-achiever. (Kniveton 1969) (Sharples 1968) (Fitt (1956).

Attitudes and SES

Studies of the relationship between educational attitudes and social class have tended to correlate educational and occupational aspirations with parental and peer influence. This is logical if we consider that although the pattern of achievement motivation a child develops is related to the class substructure in which he is trained (Douvan 1956) the parent is the link between the child, his social class position and his future life goals. (Kandel and Lesser 1969). Peer influence upon educational aspiration is usually congruent with parental influence and self expectations held by adolescents for themselves as adults are very close to the adolescent's perceptions of their parent's expectations. (Riley and Moore 1961).

Certain parental factors have been found to be significantly related to educational and occupational aspiration. Of these the two most significant are the mother's downward mobility through marriage and the relationship between parents and children as regards education. Parents need to have demonstrated positive attitudes toward education from the period of the child's early school years. A late urging for better academic performance is a relatively ineffective means of influencing a child's attitude. (Cohen 1966).

The primary influence of parents is substantiated by Simpson (1962) who found that although anticipatory socialization into middle

class values by peers has a significant influence upon occupational aspiration, parental influence is stronger. However, the evidence regarding the relative influence of peers vs parents is divided. When measuring broad categories of values held by male university students Munns (1972) found that peers were closer to subjects than were the parents of subjects.

It is entirely possible that the age of the subjects is significant. The study by Munns dealt with older subjects, university students, whereas the other studies cited above were based upon adolescent populations.

In the discussion of occupational aspiration, social class and parental influence Empey (1965) adds another, and possible important dimension to the argument. His work indicates that although students from lower class backgrounds may have lower educational and occupational aspirations on an absolute scale, on a relative scale they appear to have higher aspirations than their upper class counterparts. Lower class students were significantly more inclined to want a job that had higher social standing in the community than the one their father had. Lower class students thought it important to have a better income than their father's and to be dissatisfied with their father's occupation as the one for them. Empey asserts that lower class students not only aspire to upward mobility but show no tendency to lower their anticipated occupational role from their aspired occupation. It may, of course, be pointed out that the reason lower class students have higher aspirations on a relative scale is because almost any

occupational aspiration would be higher than that of their father, whereas for the higher class student there are many desirable occupations at the same or even a lower level than that held by their father. Never-the-less it must be recognized that to aspire for an occupation above one's present status is to seek upward mobility. To judge occupational aspirations on an absolute scale would always discriminate against those at the bottom end of the occupational scale.

Of all the studies reviewed only one dealt with a New Zealand population. This was the study by A.B. Fitt which was conducted in the Auckland primary schools in 1956. Many of the studies were based upon English samples. The rest were American based.

The Nature of Attitudes and Values

Studies dealing with the nature of attitudes and values were the least numerous. Only four of those available were considered to contain ideas of relevance to the problem at hand. A brief survey of the origins, justifications for, and the principle methods of educational attitude measurement (Allen 1960) served to confirm and consolidate information derived from a variety of other sources. The relationship between cognition and valuation was explored by Scott (1972) and by Kernan and Trebbi (1973). The former study was an attempt to determine what the author calls "natural cognitions" or concepts which pre-exist prior to the assessment of values. Both studies place values within the general cognitive framework used for understanding objects.

The criterial referents theory of attitudes proposed by Kerlinger (1972) has been useful in the consideration of referents appropriate to the research instrument which is detailed in Chapter IV.

A Critique of Attitude Measurement Techniques

The primary criticism which can be raised regarding attitude measurement techniques relates to the problem of extraneous referents. Most attitude questionnaire employ a Thurstone or Likert type format which usually consists of about 25 statements related to the attitude to be measured. The difficulty lies in establishing that the referents chosen actually focus precisely upon a single concept. In a discussion of the need for scale discrimination, Selltitz (1950) highlighted the implicit problem when he said: "A number of investigators reported that the Thurstone and Likert scales, although ostensibly measuring 'an attitude' contained statements about various aspects of the object under consideration". (p.319). Carter (1945) also drew attention to this problem in his criticism of the Peterson scale of attitude toward war (a Thurstone-type scale) in which he (Carter) found statements regarding the economic results of war in conjunction with statements dealing with the ethics of war activity. It is argued that combining items that imply different dimensions makes it impossible to specify exactly what the scale is measuring and also induces uncontrollable response bias.

The need to determine whether a set of items forms a unidimensional scale has led to the development of scale-discrimination techniques. Guttman (1945) Stouffer (1950) Edwards and Kilpatrick (1948) White and Saltz (1957). However, even a cursory examination of these techniques reveals the fact that scalogram analysis is not adequate for the problem of initial statement selection. Guttman's (1947a) suggestion that one should choose statements with homogeneous content does not solve the problem. As Edwards (1957) remarked, "...it is unfortunate that the problem of initial selection of statements has been relatively ignored...scalogram analysis plays its part after the initial statement selection". (p.202-203). Edwards also notes that Guttman in later publications (1950a, 1950b) indicates that the problem of initial statement selection is still considered to be primarily a matter of intuition.

On the whole the educational attitude studies reviewed tend to suffer from weaknesses inherent in the measuring instrument used. Furthermore, most studies seemed to lack a conceptual framework. An outstanding exception to this criticism is provided by Mizuchi (1964). His Success and Opportunity is an extensive report of a three part study begun in 1958. As he states in the preface, the major interest of the study is theoretical. Although it concerns the correlates of anomie in industrial society the theoretical framework developed has relevance for the present investigation. Accepting its principle elements, Mizuchi goes on to provide the data necessary to test the hypotheses

derivative from Merton's theory of social structure and anomie. In the process two important questions were raised: What are the success symbols endorsed at different social levels? How is education valued at these levels? The answers obtained were not dissimilar to the findings of earlier research in the same vein. (Williams 1960) (Lynd 1929) (Roper 1942). Respondents of lower SES groups tended to choose the materialistic manifestations of success which contribute to economic security. On the other hand, members of higher SES groups tended to select achievement oriented success symbols which are more abstract and less visible.

Likewise education, although a culturally accepted means to success is perceived differently at different social levels. For example when perceptions of the value of education were classified according to whether they were instrumental or non-instrumental, lower class groups tended to view education more as a means to an end than as an end in itself. (Mizruchi 1964). Working in the same area Hyman (1953) Bronfenbrenner (1958) and Beshers (1961) obtained comparable evidence of between class differences in the manner of valuing education. They concluded that to endorse materialistic success symbols and to value education instrumentally may be dysfunctional for the attainment of success goals. In discussing the potentially inhibitory effects of materialistic/instrumental values Beshers (1961) suggested that there is a conveniently useful secrecy about the non-visible success symbols of the upper status groups. Because

intellectual attainments and achievement are not visible they are not easily recognized by those who do not share them. Failure to value these success symbols is itself a barrier to entry into upper class status.

In commenting upon the apparent dysfunction of certain kinds of attitudes to education, Mizruchi suggested that lower class individuals are caught in a situation analogous to Merton's conception of anomie. In the cognitive sphere education is viewed realistically as a means for the attainment of success. In the evaluative sphere education is not highly prized as an end in itself. Mizruchi sees this phenomenon as a disparity between the cognitive and evaluative dimensions which fosters a tendency to limited achievement among members of the lower classes. The disparity becomes a source of strain between social and sub-cultural norms.

Another disparity which may provide a source of strain is a lack of congruence in the evaluative dimension between educational administrators and pupils from lower SES groups. There is evidence to suggest that with increasing levels of responsibility educators become progressively more inclined to value education terminally rather than instrumentally. A comparison of the values of educational administrators and other managerial persons revealed that although all the respondents were high in the terminal valuation of education, school administrators were significantly higher in the terminal valuation of education than were other types of administrators. (Sikula and Sikula 1972).

The interest and value of these studies dealing with the manner in which education is valued lies not only in their contribution to an understanding of anomic and structured strain, but in their implications for further research. If instrumental valuation of education correlates with social class it may also correlate with school achievement. This relationship between the manner in which education is valued and the degree of educational achievement attained needs to be tested. Evidence concerning the nature of the relationship could be useful to educators interested in the prediction and control of achievement.

To measure the relationship between educational values and educational achievement requires the development of a theoretical framework and the creation of a measuring instrument which avoids the weaknesses inherent in the Thurstone and Likert type attitude questionnaires. These two tasks will be undertaken in the next chapter.

CHAPTER III

Research Model

Previous chapters have argued that: (i) culture provides all members of society with behavioural norms and value systems. (ii) these norms and values are reflected in the goals and means of the social structure. (iii) valuation can profitably be seen as a process of cathectic orientation and has two nodes, extrinsic and intrinsic. (iv) the commodities of exchange theory can be used as the basis for a reward structure operating in social systems. (v) the identification of valuation nodes and of associated personal variables may prove useful for explaining school achievement.

The present chapter is concerned with: (i) the construction of a research model for the aims of education in terms of inherent or instrumental cultural values (ii) setting out the relevant hypotheses.

Research Model Components

The model is designed to permit the measurement of relationships between: 1. valuation mode and school achievement. 2. valuation mode

and a number of personal variables. 3. belief index of the value of education and certain personal variables. Central to the model, because it provides the basis for reducing the valuation node is a matrix of cathexis. Cathexis, which is a process of object orientation has two dimensions: mode and object. Each dimension is further faceted into categories which are theoretically exhaustive of the specified universe. Elaboration of the matrix of cathexis follows. First each dimension is treated separately and then the integration of the two dimensions is discussed.

Object Dimension

In accord with Adams' theory of exchange behaviour in social settings, the object dimension employs the three commodities: status, affect and utility. Exchange theory, which is primarily concerned with interactional behaviour, may ignore the content of the social task in which the social system is engaged, but the development of a reward structure operating within educational settings suggests that the task itself may constitute a reward object of equal importance to the behavioural commodities exchanged.

At this point it may be useful to clarify the difference between a reward structure and a model of social exchange. Social exchange theory attempts to explain system maintenance in systems of voluntary association. The reward structure elaborated here attempts to identify the values or rewards operating within a system of compulsory

association. Systems of voluntary association assume reciprocity which is not necessarily the case in systems of compulsory association.

Because organized educational settings are in fact social systems, the commodities of social exchange provide useful categories according to which the aims or goals of education may be classified. However, it is not possible to view these derived aims as exchange commodities because they are not actually exchanged. They are awarded, or made available to some members of the system (pupils) by other members of the system, (teachers and administrators). Educational aims are by definition values, not the least of which is the actual content of the educational tasks involved. Therefore, the actual task activity in which actors are engaged will be interpreted as a fourth cathectic object of the reward structure. The resulting Object Dimension of the Matrix of Cathexis consists then of four objects: status, affect, utility, and task. These objects, although primarily derived from exchange commodities (Adams, 1971) are here interpreted as rewards available to pupils within the classroom setting.¹ The nature of each of these cathectic objects is briefly described below.

(i) Status

Status as a cathectic object is characterized by the recognition or respect it earns. As such it is associated with rank in terms of performance and/or competence levels. There is room within the

1. For another example of exchange commodities used in an analysis of classroom behaviour compare Bates (1971) Disensus in the Role Set: The Case of the Teacher. pp.23-24.

educational framework for these levels to be both publicly (e.g. officially) and privately (e.g. personally) assessed and acknowledged.

(ii) Affect

Affect as a cathectic object is concerned with expressions of friendliness, warmth and approval. Pupils may strive to elicit positive affective responses through manifesting behaviour appropriate to classroom settings. Likewise the classroom setting provides opportunities for pupils to express sympathy, warmth and friendliness. Both the receipt and the bestowal of affect have gratificatory reward value.

(iii) Utility

Utility as a cathectic object has as its focus functional rewards in terms of goods and services gained from educational activities. In the classroom setting these may be manifested in information gained, skills mastered, objects produced, examinations passed or degrees of competency obtained. The overall utility of the school experience may be assessed in terms of career potential or kinds of competency achieved.

(iv) Task¹

Task as a cathectic object is best described in terms of both the internal and external components of the stimulus-complex involved in the learning situations provided through classroom systems. These components include problems, assignments and desires to which the responses may be either instrumental or appreciative.

While Status, Affect or Utility comprise a facet, Task stands apart as a different dimension. In operationalization some measure of overlap may occur in that Status, Affect or Utility, gleaned or given, is likely to have a substantial task component.

Mode Dimension

In accord with Lewis' theory of valuation the mode dimension employs only two categories: extrinsic and intrinsic. These two categories according to which values may be classified define the evaluative modes of orientation, and it is the mode of orientation, extrinsic or intrinsic, which determines an actor's preference for one cathectic object over another.

-
1. The concept of task within the classroom setting has been based on the ideas developed by Breer and Locke (1965) in their discussion of the theory of task experience as a source of attitudes. Drawing upon the work of other researchers, Breer and Locke defined task in terms of a "stimulus-complex to which the organism responds by performing various overt or covert operations..." which may be classed either as "appreciative" or "instrumental". For present purposes it is worthwhile to note that in the discussion of task both external stimuli such as are represented by "problems or assignments" (Thiebaut and Kelly, 1959) and "desire, goal, want, wish" (Ryan, 1958) are recognized.

(i) Extrinsic

The extrinsic valuation mode has two essential characteristics which determine its orientation to cathectic objects. It is primarily instrumental and objective. The instrumental orientation places value on an object in terms of its potential for future gratification. The objective orientation places value on an object in terms of public consensus.

Within the extrinsic valuation mode objects are considered first as a means to goal achievement. Goals themselves are determined objectively, or in accordance with general consensus.

(ii) Intrinsic

The intrinsic valuation mode has two essential characteristics in its orientation to cathectic objects. It is primarily terminal and subjective.

The terminal orientation places value on an object in terms of immediate and inherent value for the subject.

The subjective orientation places value on an object in terms of the direct subjective experience it affords.

Within the intrinsic valuation mode objects are considered first as ends in themselves. The value of these end states is determined subjectively, or in accordance with individual personal standards.

The Matrix of Cathexis

The object dimension and the mode dimension when cross related produce eight mutually exclusive cathectic objects which theoretically exhaust the specified universe. Each cathectic object obtained necessarily represents either an intrinsic or an extrinsic value.

Matrix of Cathexis

Objects of Cathectic Orientation	Mode Dimension	
	Extrinsic	Intrinsic
Status	1.1 Extrinsic/Status	1.2 Intrinsic/Status
Affect	2.1 Extrinsic/Affect	2.2 Intrinsic/Affect
Utility	3.1 Extrinsic/Utility	3.2 Intrinsic/Utility
Task	4.1 Extrinsic/Task	4.2 Intrinsic/Task

FIGURE 1. Matrix displaying Integration of Mode and Object Dimensions

The Matrix of Cathexis integrates the evaluative mode with the objects of cathectic orientation and creates eight individual cells. Each cell represents a unique and specific value inherent in social systems within educational settings.

Since the focus of this research is the valuation of educational aims, the cathectic objects in each cell are intended to reify educational aims which are socially approved goal states. Consequently, it is appropriate that the cathectic objects be considered only in terms of their gratificatory potential, as the primary elements in a

reward structure. For these reasons status, affect and utility are viewed only as positive or desirable commodities. This is a narrower interpretation than that employed in exchange theory which recognizes both the positive and negative manifestations of giving and denying the social exchange commodities.

Throughout the discussion of each of the eight cathectic objects it is important to keep in mind the essential characteristics of the two valuation modes: extrinsic and intrinsic. It is the essential character of the two valuation modes which, when applied to the cathectic objects determines the educational values educed. Drawing on Lewis' analysis of valuation it is argued that intrinsic values may be viewed as subjective because they are realized through direct experience which is of significance to the subject. Subjective values are those which have immediate value for the subject personally. On the other hand, extrinsic values may also be termed as objective values since their worth is determined by the quality of the object valued. This quality obtains its validity through public consensus rather than private assessment. Extrinsic values are consequently externally derived.

Because the conceptualization of the reward structure created by the matrix of cathexis is fundamental to the research model each value needs a brief elaboration. Values have been named according to the particular combination of mode and object involved. Numbers refer to the Matrix of Cathexis as shown in Fig.1.

1.1 Extrinsic/Status

This places value on the public recognition of achievement and the deference accorded such achievement. The instrumental nature of education is emphasized for example by the official acknowledgement of the prestige ranks determined by examination performance. "To prepare pupils so that they are capable of getting ahead in society" is an educational aim which illustrates the desire for extrinsic status.

1.2 Intrinsic/Status

This places value on the development of self-esteem in accordance with an awareness of personal capacity. Consequently, feelings of pride are the result of subjective assessments of personal growth and performance. "To help pupils develop self respect." is an example of an educational aim which illustrates the concept of intrinsic status.

2.1 Extrinsic/Affect

This places value on gaining affect through the performance of socially appropriate behaviour. The instrumental nature of education is reinforced because the rewards of warmth and approval are contingent upon conformity to social norms. "To prepare pupils so that they can become accepted members of the community." is an educational aim which exemplifies the nature of extrinsic affect.

2.2 Intrinsic/Affect

This places value on the generation of friendly caring behaviour based on understanding others. The subjective personal satisfaction

which accompanies the expression of warmth or concern is immediate and inherent to the situation. "To help pupils become sensitive to the needs of others." is an educational aim which exemplifies the quality of intrinsic affect.

3.1 Extrinsic/Utility

This places value on the beneficial results which follow from an activity. For example learning would be valued according to its potential contribution to the production of goods or services. "To help pupils qualify for good jobs." is an educational aim which exemplifies the nature of extrinsic utility.

3.2 Intrinsic/Utility

This places value on an activity in terms of the process rather than the product. Consequently satisfaction is derived from the quality of the performance and the development of competency regardless of objective standards of utility. For example "To help pupils learn how to do things as well as they can." is an educational aim which illustrates the character of intrinsic utility.¹

4.1 Extrinsic/Task

This places value on the purpose of the task rather than the nature of the task. The task is interpreted in terms of the external components of the stimulus complex, (i.e. problems or

1. Studies which indicate the importance of competence as a basic human need are discussed in detail in Motivation Reconsidered, White (1959).

assignments) and the anticipated response is instrumental, (i.e. preparatory in nature). For example, learning facts in order to pass examinations is an instrumental response to an external stimulus. Likewise, "To help pupils qualify for further education or training." is an educational aim which is characteristic of extrinsic task.

4.1 Intrinsic/Task

This places value upon the immediate satisfaction derived from task performance. The task itself is interpreted in terms of the internal components of the stimulus complex (i.e. desire, goal or wish) and the response is "appreciative" (Ryan 1958) (i.e. subjective). For example, tasks which seek to stimulate and satisfy the curiosity encourage appreciative responses to internal stimuli. "To help pupils enjoy learning." is an educational aim which conveys the essence of intrinsic task.

Although the eight values described have been derived from the matrix of cathexis, each can be recognized as representative of the kinds of educational aims which are endorsed both by educators and by the public at large. Half of them are intrinsic and half are extrinsic in mode. Neither mode is seen as morally superior to the other. Both modes reflect value categories which are fundamental to the valuation process.

Belief Index Scale

A second theme of concern to the present research is the assessment of the extent to which education in general is valued by the individual.

According to Merton's theory the social structure provides culturally approved means and goals, and in general education is both collectively endorsed and culturally valued. This can be interpreted to mean that the goal attainment function of education is both cognized and valued. Cognition and valuation though closely related spheres involve different processes. A cognition may take the form of an empirical generalization about some feature of human experience. As an existential statement about the nature of things, it involves neither liking nor disliking for the object referred to. (Breer and Locke, 1965). On the other hand, valuation is part of the cathectic response system and refers to the criteria used in comparative judgement about objects. Valuation deals with values or goal states which are deemed desirable. Cognition deals with what is thought to be true. Valuation is a process of judgements about what ought to be the case. Cognition is a process of identifying what appears known to be the case.

The research model as well as providing a matrix of cathexis to measure the mode of valuation of education also provides a belief index scale to measure cognitions regarding the instrumental value of education. Beliefs about the instrumental value of education are seen as having four dimensions. These are as follows: 1). Education as a means of goal attainment. 2). Education as a value to the community and the nation.

3). Education as personally valuable. 4). Education as valuable to different segments of the population.

These four dimensions were specified and used in that order in accordance with the theoretical assumptions upon which the study is based. The first dimension provides the appropriate mental set v.s.v. the instrumentality of education. The remaining dimensions exhaust the potential universe of that instrumentality, e.g. in the personal realm, in the public realm, and in terms of the generalized "other".

The degree to which education is cognized as having value in each of these dimensions is measured by means of a Belief Index Scale which permits responses to be ranked in a continuum from "least value" to "most value".

The Matrix of Cathexis and the Belief Index Scale were designed to: (i) predict to school achievement and SES levels. (ii) test whether education is a universally held cultural value.

Personal Variables

(i) School Achievement

For the purpose of this study, school achievement has been simply defined in terms of teacher assessment of performance. Therefore school achievement is seen as distinct from ability or IQ in the sense that school achievement need not necessarily reflect innate potential. School achievement is the actual performance level which is determined by the standards employed by teachers as they personally interpret the requirements of the school syllabus. With the exception of School

Certificate Examination results, the term "school achievement" may be assumed to reflect school performance in accordance with the requirements of classroom situations.

In the present study the school achievement measurement was based on two end of term assessment marks given by teachers in two basic core subjects, English and Maths. These letter marks which ranged from 'A' through 'D' were each given a corresponding numerical value of 1 through 4. Using these values, an average score was computed for each student based upon the four achievement assessment marks he had earned during Terms I and II.

(ii) SES

In this study SES was determined in accordance with the Elley Irving Scale of occupational levels as it applied to the 'occupation of father' indicated by each respondent on his/her questionnaire.

(iii) Other Personal Variables

In addition to SES and School Achievement, data was collected concerning the following personal variables: sex, class within the Form, parental valuation mode and sex of parent respondent. These variables were included in the research model because the literature indicates that these variables are relevant to a study which attempts to explain differential levels of school achievement.

Form classes do not intentionally reflect ability levels within the Form, but because these class groupings are determined according to curriculum content e.g. professional, commercial, technical, home and wood craft, they result in informal streaming. Furthermore, between the different courses within the Form there may be significant

differences in SES levels, occupational aspirations, and school achievement. (Vellekoop, 1971).

Both educational achievement and aspirations have been found to be affected by sex. (Sewell, 1957) (Liversidge, 1962). Furthermore, sex plays a role in attitudes toward education. (Sharples, 1968) (Fitt, 1956).

Sex of the parent has been found to be significantly related to the type and degree of influence exerted on pupils' educational plans. However, the precise nature of the influence exerted by sex is extremely complex and involves psychological concepts beyond the scope of this study. For these reasons the relationship between sex and the dependent variables was not specified in the hypotheses.

Hypotheses

The hypotheses that derive from the research model are as follows:

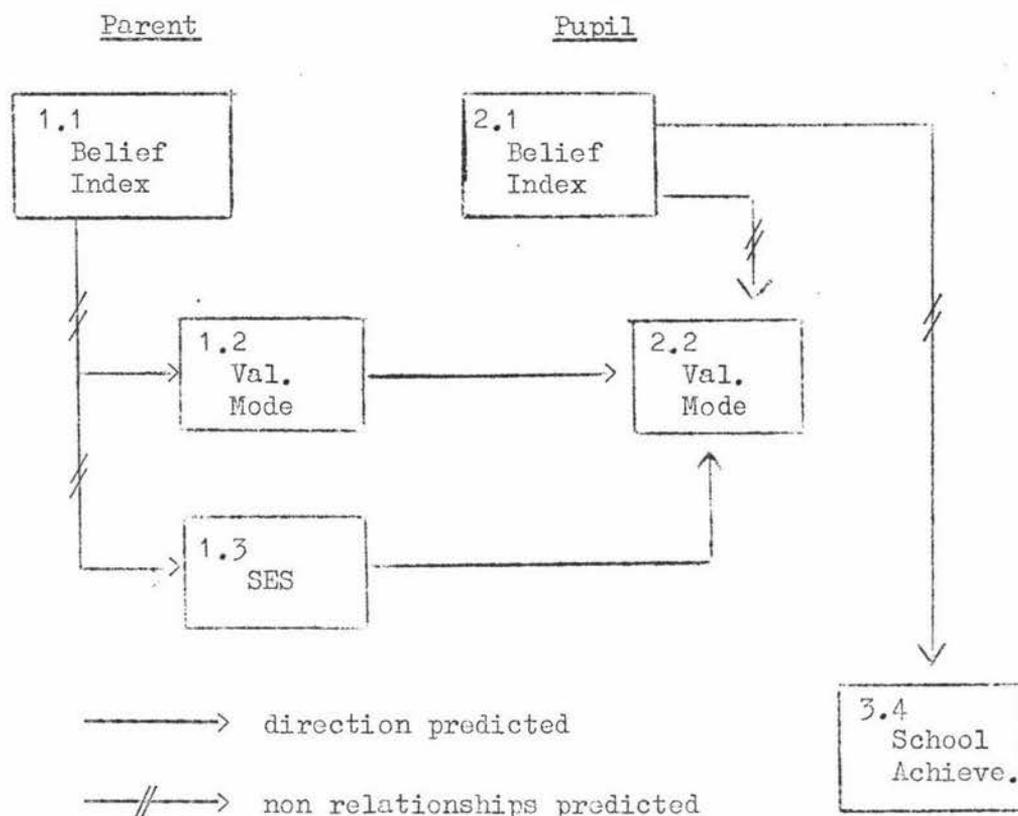
- H.1 Valuation of education, extrinsically or intrinsically, is a function of SES.
 - H.1.1 The lower the SES the greater the probability that education will be valued extrinsically.
 - H.1.2 The higher the SES the greater the probability that education will be valued intrinsically.
- H.2 Educational achievement is a function of the valuation of education, extrinsically or intrinsically.
 - H.2.1 The higher the intrinsic valuation the higher the achievement level.
 - H.2.2 The higher the extrinsic valuation the lower the achievement level.

- H.3 The belief index of the value of education is not a function of either SES or achievement.
- H.3.1 The belief index of the value of education will show no significant relationship with either SES or achievement.
- H.4 Pupil valuation mode, extrinsic/intrinsic, is a function of parental valuation.
- H.4.1 Pupil valuation modes will be congruent with those of their parents.

Research Model

The research model with its six major components: 1). SES. 2). School Achievement. 3). Pupil Valuation Mode. 4). Parental Valuation Mode. 5). Pupil Belief Index. 6). Parental Belief Index appears in Figure 2. The direction of the predicted relationships are shown by arrows which when crossed indicate null hypotheses.

Figure 2
Hypotheses Model 'A'



Predicted Relationships between Variables.

The model uses separate but parallel levels to indicate the predicted relationships between the six variables. The parental components appearing to the left of the model conform to the conventional left —> right linear relationship between concepts.

The presentation of relationships between variables shown in Fig.2 should be accepted as displaying the procedure adopted in defining which components shall be treated as independent variables and which shall be treated as dependent.

The operationalisation of the research model, the methods of data collection and the data analysis employed provide the substance of the following chapter.

CHAPTER IV

Methodology

This chapter deals with the operationalisation of the research model. To this end it will be concerned with i). construction, interpretation and evaluation of the research instrument: ii). population characteristics; iii). methods of data collection; iv). techniques of data analysis.

Research Instrument

The main source of data was an eight page questionnaire organized according to the theoretical basis expanded in the preceding chapters. It incorporated three sets of variables: i). valuation mode ii). **belief index** iii). personal characteristics.¹ The discussion which follows describes the ways in which each of the variables was measured.

Valuation Mode

The measure of valuation mode employed the eight cathectic categories described in Chapter III, each of which represents a type of educational value. For the operationalisation these value types were converted to statements which expressed the gratifactory nature

1. A copy of the questionnaire appears in Appendix A

of each in terms of an educational aim.

Each statement was designed to be consistent with the theoretical framework and equally impartial (no aim was a priori better or worse than any other).

To meet these requirements certain guidelines were followed in the generation of each statement. Every effort was made to eliminate unintentional value intrusions so that each aim would appear in an equally favourable light. A model questionnaire was drawn up and submitted to Honours students in education for criticism and suggestions. The final wording of the eight statements, obtained after lengthy examination and revision, appears below. The statements were prefaced with the following introductory phrase: "The Secondary Schools should aim to:" Labels in brackets did not appear in the questionnaire.

1. Prepare pupils so that they are capable of getting ahead in society. (Status/Extrinsic)
2. Help pupils develop self respect. (Status/Intrinsic)
3. Prepare pupils so that they can become accepted members of the community. (Affect/Extrinsic)
4. Help pupils become sensitive to the needs of others. (Affect/Intrinsic)
5. Help pupils qualify for good jobs. (Utility/Extrinsic)
6. Help pupils learn now to do things as well as they can. (Utility/Intrinsic)

7. Help pupils qualify for further education or training. (Task/Extrinsic)
8. Help pupils enjoy learning. (Task/Intrinsic)

Presentation Format

When the research goal is to establish which of one or more responses is preferred by a population sample, the paired comparison technique is commonly used. This technique, as the name implies, involves pairing each of the items to be compared. The purpose of such pairing is to provide for the maximum exposure to a minimum number of concepts, and to allow each item to be compared with every other. The purposes of this study indicated that the paired comparison technique would be the most suitable method of obtaining valid data.

Using the paired comparison questionnaire format meant that each intrinsically oriented statement was paired with each extrinsically oriented statement thus creating sixteen separate items. Respondents, who faced sixteen forced choice items which featured each of the eight statements four times, were asked to indicate which statement in each pair was in their opinion the better aim for education. In order to equalize the number of cases in which a particular statement occurred first, alternate pairs were reversed and the order of the presentation was randomised. An example of the item format follows.

Item Format

1. The Secondary Schools should aim to:
 - A. Help pupils qualify for further education or training. ()
 - B. Help pupils enjoy learning.

Preceding the items were instructions for self-administration and a model example was provided. The final instructions stressed that no answers were "right" or "wrong", and reminded respondents of the purpose of the questionnaire: "To understand how pupils and their parents feel about the aims of secondary education."

Belief Index

The belief index scale was constructed in accordance with the theoretical framework and designed to measure beliefs about the instrumental value of education, specifically: i). the achievement of life goals; ii). the welfare of the community and the nation; iii). the value of education for the individual; iv). the value of education for the general population.

One question was formulated for each of the four areas. The phrasing of each question was deliberately general because of the nature of the intent. Culturally endorsed belief systems lack in specificity and attempts to tap them must allow for a breadth of individual interpretation of the possible concepts inherent in terms such as "education".

Each item was accompanied by a Likert type scale that provided six alternatives ranging from "least" (of no value) to "most" (of very great value).

Presentation Format

Preceding the items were instructions for self administration and a model example. The model was explained and final remarks emphasized that there were no right and wrong answers. The items were presented in the following order:

1. How important do you think education is in helping people to reach their goals in life?
2. How valuable do you think public education is to the community and the nation?
3. How important is education to you personally?
4. For whom is a high school education valuable?

Reliability

Test-retest reliability of the instrument was measured using 17 Fourth Form high school pupils and an elapsed interval of three weeks. The resulting Pearson product moment correlation coefficient .827 can be considered as representing "a marked relationship" with a better than .01 level of significance. (Guilford, 1965)

Sample

Because it is primarily in high school that pupils can be expected first to become aware of aims of secondary education, it was decided that the population should be high school age based. Form Four was selected as the best group to sample because it is the least affected by the constraints of the high school organization. Third

Formers were seen as too new and unfamiliar with secondary education and Fifth Formers were seen as being unduly influenced by the impending School Certificate examinations. Sixth and Seventh Forms were unsuitable because they do not represent a cross section of the total school population.

In pursuing its purpose to test a specified relationship between school achievement and valuation mode the study, following Meehan (1965), employs a 'theory falsification' design and makes no attempt to establish or test general laws. Consequently whether or not the subjects constitute a sample of any specified population is irrelevant. Notwithstanding, a better test of the hypotheses put forward is likely to occur if a spread of occupation and achievement levels is obtained.

Of the four high schools available one seemed to have a population least distorted by factors which might affect the distribution of SES levels. For this reason, the sample upon which the study is based consists of all the Form Four pupils at that school. Pupils were given the questionnaire during the second week of October, three weeks after their return from the August holidays. Each pupil completed his/her questionnaire during class time and each pupil was given one additional questionnaire to take home to parents. Pupils put their own names on both questionnaires ostensibly for purposes of identifying the returned questionnaires. Instructions sent home in cover letters stated that either parent was free to respond or that both parents could complete the questionnaire jointly.

Only one questionnaire was sent home with each pupil because it was believed that to have tried to obtain responses from both parents would have had a negative influence on the total number of families represented. One response from each home was considered sufficient since the sex of the parent respondent was not a variable which was included in the specified relationships.

Parental responses were returned to the school by the pupils and collected by Form teachers over a period of three weeks. Late in October reminders, with stamped and addressed envelopes, were mailed to all those parents who had not yet returned their questionnaires. Similarly families whose children were absent on the day the survey was administered received explanatory letters, questionnaires, and return envelopes in an effort to obtain a maximum response from the sample group.

Questionnaires were completed by 257 pupils. Of these, 230 returned the questionnaires sent home to parents. Out of the total number of questionnaires completed, 6 of the parental responses were invalid. Consequently the final number of questionnaires processed included 224 paired (pupil/parent) responses, and 33 pupil responses.

Data Analysis

The data to be analysed consisted of scores derived from two major dependent variables and the classification codes of a number of independent variables. Each is explained briefly.

Dependent Variables:

1. Valuation Mode

The Matrix of Cathexis which was designed to educe the valuation mode of respondents provided sixteen paired extrinsic/intrinsic value statements. Because the paired comparison format yields an ipsative score it was possible to code the responses in such a way as to record only those which indicated a preference for the intrinsic mode of valuation. Consequently the Valuation Mode is presented in terms of intrinsic valuation only. Intrinsic valuation is derived from summated ordinal scores with a potential range of from 0 to 16.

2. Belief Index

The Belief Index scale which was designed to measure the extent to which education is believed to have instrumental value in each of four different areas, provided a six unit response scale for each of the four areas tested. Consequently, the Belief Index is derived from summated ordinal scores which have a total potential range of from 4 to 24.

Independent Variables

The seven independent variables consist of five personal variables and two other variables which are treated as personal variables. These other two variables are derived from the parents' intrinsic valuation and Belief Index scores. The classification procedures used as a basis for analysis were follows:

<u>Sex of Pupil Respondent:</u>	Code 1	Male
	Code 0	Female
<u>Sex of Parent Respondent:</u>	Code 1	Mother
	Code 2	Both
	Code 3	Father
<u>SES Level;</u>	Code 1	High
	Code 2	High
	Code 3	Medium
	Code 4	Medium
	Code 5	Low
	Code 6	Low
<u>Achievement Level:</u>	Code 1	High
	Code 2	Medium
	Code 3	Low
<u>Class Within the Form:</u>	Code 1	4 L
	Code 2	4 G
	Code 3	4 S
	Code 4	4 F
	Code 5	4 P
	Code 6	4 C
	Code 7	4 T
	Code 8	4 W
	Code 9	4 H
<u>Intrinsic Valuation of Parent:</u>	Code	
	0 to 16	
<u>Belief Index of Parent:</u>	Code	
	4 to 24	

Statistical Procedures

Statistical procedures were chosen with three main criteria in mind, efficiency, power and comprehensiveness. Computer facilities available made it possible to choose the most effective statistical procedures. Research design and population characteristics indicated that the following procedures would prove effective:

1. Stepwise Multiple Regression Analysis

The hypotheses specify the relationships between the dependent variables and a number of independent personal variables. Stepwise multiple regression analysis was chosen to show the relative contribution of each independent variable to the dependent variables. This statistical procedure as provided by the SPSS computer programme is particularly useful because it includes a correlation matrix for all the variables as well as providing F ratios for each dependent variable.

2. Chi-square Statistic

Subsequent to the determination of correlation coefficients and the mean scores of all variables, the chi-square statistic was applied to further test the relationship between the dependent and independent variables.

Multiple regression analysis and the chi-square statistic were performed through the use of computer programmes available in Burroughs B6700 Statistical Package for the Social Sciences, Computer Unit Notes No. 8, Massey University. The following Chapter presents the findings.

Chapter V

Findings

The present chapter has four sections; the first deals with population characteristics, the second discusses response patterns, the third presents the findings resulting from an examination of the specified sets of relationships in the research model, and the fourth provides an item discrimination analysis of the matrix of cathexis. The implications of these findings are considered in the final chapter.

1. Population Characteristics

The population upon which the study was based consisted of the 280 pupils currently enrolled in Form Four of a large coeducational high school. Seventeen of the 280 pupils were absent on the day the questionnaire was administered. Consequently questionnaires were sent to them and their parents by mail. Returns were received for 257 pupils and 224 parents, (90% and 80% respectively).

For the purpose of testing the hypotheses only the data obtained from the 224 paired pupil/parent responses were used.¹

¹ The same statistical analyses were applied to the data obtained from the single pupil responses and the results are presented in Appendix B.

Independent Variables

In addition to measuring Valuation Mode and Belief Index the questionnaire provided for the identification of SES and Achievement levels as well as Sex and Class within the Form. The actual distribution of the sample across each of these different independent variables provides an overall picture of the character of the population.

SES Levels: Socio Economic Status levels were based upon the occupation of the father as stated on the questionnaire. These occupations were translated into six SES levels through the use of the Elley-Irving Socio Economic Index (1972). This Index ranks New Zealand occupations along six levels as determined by education and income. A copy of the Elley-Irving list of the 315 occupations so ranked appears in Appendix C. The actual distribution of the population sample across the six SES levels is presented in Table 1.

Table 1

Distribution of population over six SES levels.

	1	2	3	4	5	6	Total
Abs. Freq.	32	59	42	62	9	20	224
Rel. Freq. (%)	14.3	26.3	18.8	27.7	7.0	8.9	100
Cum. Adj. Freq. (%)	14.3	40.6	59.4	87.1	91.1	100	100

N = 224

Mean = 3.076

The population sample came primarily from the three upper SES levels. Levels one, two and three contain nearly sixty percent of the total population tested, but the two levels which make the largest contribution are levels two and four.

Although all SES levels are represented, level five makes the smallest contribution with only four percent of the sample coming from that level.

When compared with the distribution of the male New Zealand labour force as shown in Table 2 (taken from Table 5 of the Elley-Irving report)¹ the present sample differs mainly in the proportion of workers found in levels one and five.

Table 2

Percentage of male labour force in each socio-economic level by statistical area.

Socio-Economic Level	1	2	3	4	5	6
Northland	4.8	30.5	7.2	24.5	18.2	14.8
Central Auckland	6.2	14.7	15.2	32.8	23.3	7.8
South Auckland - Bay of Plenty	5.1	24.9	9.0	27.9	17.7	15.4
East Coast	5.2	20.2	8.6	22.0	19.9	24.1
Hawkes Bay	4.7	21.0	10.1	24.3	23.0	16.9
Taranaki	4.2	30.2	7.8	22.4	21.4	14.0
Wellington	7.3	16.2	18.6	28.1	20.1	9.7
Marlborough	4.7	22.4	17.1	24.5	16.5	14.8
Nelson	4.7	21.4	9.2	26.5	18.6	19.6
Westland	4.0	17.3	8.7	27.5	16.8	25.7
Canterbury	5.7	18.0	13.9	27.9	23.0	11.5
Otago	5.9	19.1	11.6	27.4	23.2	12.8
Southland	3.9	24.6	8.8	22.8	24.8	15.1

1. Elley-Irving, "Socio-Economic Index for New Zealand" (1972)
New Zealand Journal of Ed. Studies, 7, p.164

Although there is a considerable range in the distribution of the New Zealand labour force (male) across the six SES levels, generally speaking, levels two and four tend to register the largest proportion of the work force. In this respect the sample tested in the present study is typical. However, the sample differs from national norms in the percentage of the labour force found in levels one and five. The present sample is considerably higher in the percentage of level one occupations and considerably lower in the percentage of level five occupations.

Achievement Scores: Achievement scores were based upon teachers' assessment marks which ranged from A through E. These marks were given numeric values, averaged and converted to three levels: high, medium and low. Table 3 shows the actual distribution of the pupil population across these levels of achievement.

Table 3

Distribution of population sample across the three levels of achievement.

	High	Medium	Low	Total
Abs. Freq.	32	131	61	224
Rel. Freq. (%)	14.3	58.4	27.2	100
Cum. Adj. Freq. (%)	14.3	72.8	100	100
N = 224 Mean = 2.129				

The majority or 58.5% of the pupil population were neither high nor low in achievement. Of the remaining number, 14.3% were rated as high in achievement and 27.2% received a low achievement rating.

Sex: The sex ratio of the population sample was not equally proportional between males and females. Table 4 shows the distribution of the sample according to sex.

Table 4

Distribution of population according to sex.

	Male	Female	Total
Absolute Frequency	94	130	224
%	42.0	58.0	100

A clear majority of the population sample, 58%, were girls and this information helps to complete the picture of the kind of pupils who were tested. However, because the role of sex in determining attitudes and achievement is extremely complex, this variable was not included in the hypothesized relationships under investigation. The sex ratio is only included here in order to help complete the description of population characteristics.

Class within the Form: Within each Form of the high school from which the sample was taken pupils are grouped into classes according to the curriculum emphasis of the optional courses chosen. The 224 Form Four pupils tested came from nine different classes: 4L (French),

4G (German), 4S (Science), 4P (Professional), 4C (Commercial), 4T (Technical), 4W (Woodshop), 4H (Homecraft). The distribution of the sample among the classes within the Form is shown in Table 5.

Table 5

Distribution of pupils among the Form classes.

Class	Abs. Freq.	Per Cent
4L	32	14.3
4G	33	14.7
4S	29	12.9
4F	30	13.4
4P	31	13.8
4C	24	10.7
4T	22	9.8
4W	13	5.8
4H	10	4.5

N = 224 Mean = 4.250

The majority, 69.2%, of the pupils came from the more academically oriented classes: Latin, German, Science, French and Professional. Each of the classes with a more practical orientation, e.g. Commercial, Technical, Woodshop and Homecraft, have smaller enrolments and the homecraft and woodshop classes combined contributed only a little over ten percent to the total population sample.

Dependent Variables

The questionnaire was designed to measure two dependent variables: Valuation Mode and Belief Index. The distribution of the population along these two variables serves to further identify population characteristics. Each item in the questionnaire contained

two educational aims from which respondents were requested to indicate a preference.

By looking at the breakdown of Valuation Mode scores in Table 6 it is possible to obtain an overview of the way in which parents and pupils responded to each item on the questionnaire. In the questionnaire each item was prefaced by the statement: "The secondary schools should aim to:"

Table 6

Absolute and relative frequency with which each educational aim was chosen by paired parent/pupil respondents.

Item	Educational Aim	Parents		Pupils	
		Freq.	Per Cent	Freq.	Per Cent
1.	A. Help pupils qualify for further education or training	104	(46)	147	(66)
	B. Help pupils enjoy learning	120	(54)	77	(34)
2.	A. Help pupils learn how to do things as well as they can	174	(77)	121	(54)
	B. Help pupils qualify for good jobs	50	(23)	103	(46)
3.	A. Prepare pupils so that they can become accepted members of the community	93	(46)	192	(78)
	B. Help pupils develop self respect	131	(54)	32	(22)
4.	A. Help pupils become sensitive to the needs of others	159	(71)	78	(35)
	B. Prepare pupils so that they are capable of getting ahead in society	65	(29)	146	(65)

Table 6 continued

Item	Educational Aim	Parents		Pupils	
		Freq.	Per Cent	Freq.	Per Cent
5. A.	Help pupils develop self respect	126	(56)	64	(29)
B.	Help pupils qualify for good jobs	98	(44)	160	(71)
6. A.	Help pupils qualify for further education or training	71	(32)	89	(40)
B.	Help pupils learn how to do things as well as they can	153	(68)	135	(60)
7. A.	Help pupils enjoy learning	152	(68)	100	(45)
B.	Prepare pupils so that they are capable of getting ahead in society	72	(32)	124	(55)
8. A.	Prepare pupils so that they can become accepted members of the community	117	(52)	160	(71)
B.	Help pupils become sensitive to the needs of others	107	(48)	64	(29)
9. A.	Help pupils learn how to do things as well as they can	186	(83)	152	(68)
B.	Prepare pupils so that they are capable of getting ahead in society	38	(17)	72	(32)
10. A.	Help pupils qualify for further education or training	121	(54)	160	(71)
B.	Help pupils develop self respect	103	(46)	64	(29)
11. A.	Help pupils enjoy learning	124	(55)	97	(43)
B.	Prepare pupils so that they can become accepted members of the community	100	(45)	127	(57)

Table 6 continued

Item	Educational Aim	Parents		Pupils	
		Freq.	Per Cent	Freq.	Per Cent
12.	A. Help pupils qualify for good jobs	108	(48)	53	(24)
	B. Help pupils become sensitive to the needs of others	116	(52)	171	(76)
13.	A. Help pupils learn how to do things as well as they can	163	(73)	149	(67)
	B. Prepare pupils so that they can become accepted members of the community	61	(27)	75	(33)
14.	A. Help pupils become sensitive to the needs of others	94	(42)	64	(29)
	B. Help pupils qualify for further education or training	130	(58)	160	(71)
15.	A. Help pupils enjoy learning	139	(62)	86	(38)
	B. Help pupils qualify for further education or training	85	(38)	138	(62)
16.	A. Prepare pupils so that they are capable of getting ahead in society	69	(31)	140	(62)
	B. Help pupils develop self respect	154	(69)	84	(38)

Parents: N = 224 Pupils: N = 224

Table 6 lists all the questionnaire items exactly as they appeared and indicates the absolute and relative frequency (percent) with which each was chosen by parents and pupils.

Because each individual aim appeared four times in the questionnaire it is only by totalling the number of times each aim was preferred that the rank order of individual aims may be obtained.

Table 7 provides a list of the eight educational aims in the order of their parental preference rating. Table 8 provides the same information for pupil preferences.

Table 7

Parents' preferred educational aims in ranked order, with valuation mode indicated.

Rank	Educational Aim	Valuation Mode		Preference Totals
		Int.	Ext.	
1.	Help pupils learn how to do things as well as they can	676		676
2.	Help pupils enjoy learning	535		535
3.	Help pupils develop self respect	515		515
4.	Help pupils become sensitive to the needs of others	476		476
5.	Help pupils qualify for further education and training		426	426
6.	Prepare pupils so that they can become accepted members of the community		371	371
7.	Help pupils qualify for good jobs		341	341
8.	Prepare pupils so that they are capable of getting ahead in society		244	244
Totals		2,202	1,382	3,584

N = 224 Items = 16

Table 8

Pupils' preferred educational aims in ranked order with valuation mode indicated.

Rank	Educational Aim	Valuation Mode		Preference Totals
		Int.	Ext.	
1.	Help pupils learn how to do things as well as they can	557		557
2.	Help pupils qualify for further education or training		556	556
3.	Prepare pupils so that they can become accepted members of the community		554	554
4.	Prepare pupils so that they are capable of getting ahead in society		482	482
5.	Help pupils qualify for good jobs		454	454
6.	Help pupils become sensitive to the needs of others	377		377
7.	Help pupils enjoy learning	360		360
8.	Help pupils develop self respect	244		244
Totals		1,538	2,046	3,584

N = 224 Items = 16

The educational aim which was most preferred by both parents and pupils is expressed in the phrase: "Help pupils learn how to do things as well as they can". Agreement between parents and pupils ceases here and, in fact, these two groups take nearly opposing views concerning the remaining seven educational aims. Those aims least

preferred by pupils: "Help pupils become sensitive to the needs of others", "Help pupils enjoy learning", and "Help pupils develop self respect", are among the aims most preferred by parents. Consequently the contrary is equally true; those aims least preferred by parents: "Help pupils qualify for further education or training", "Prepare pupils so that they can become accepted members of the community", and "Prepare pupils so that they are capable of getting ahead in society", are among those most preferred by pupils.

It is interesting to note that while parents rank "Help pupils enjoy learning" second in total preference, pupils rank that aim seventh in total preference.

In every case both extrinsic and intrinsic educational values were represented and the valuation mode of a respondent was determined according to the educational values chosen. The Valuation Mode scores when totalled according to intrinsic/extrinsic orientation show that parents see intrinsic values as the most desirable while pupils prefer extrinsic values.

Response Patterns

The two dependent variables measured by the research instrument were Valuation Mode and Belief Index. The responses derived from these two scales provide the primary data used to test the hypothesized relationships between the variables. Before analysing these relationships it is useful to examine the scores obtained by parents and their children on the two dependent variables.

Valuation Mode

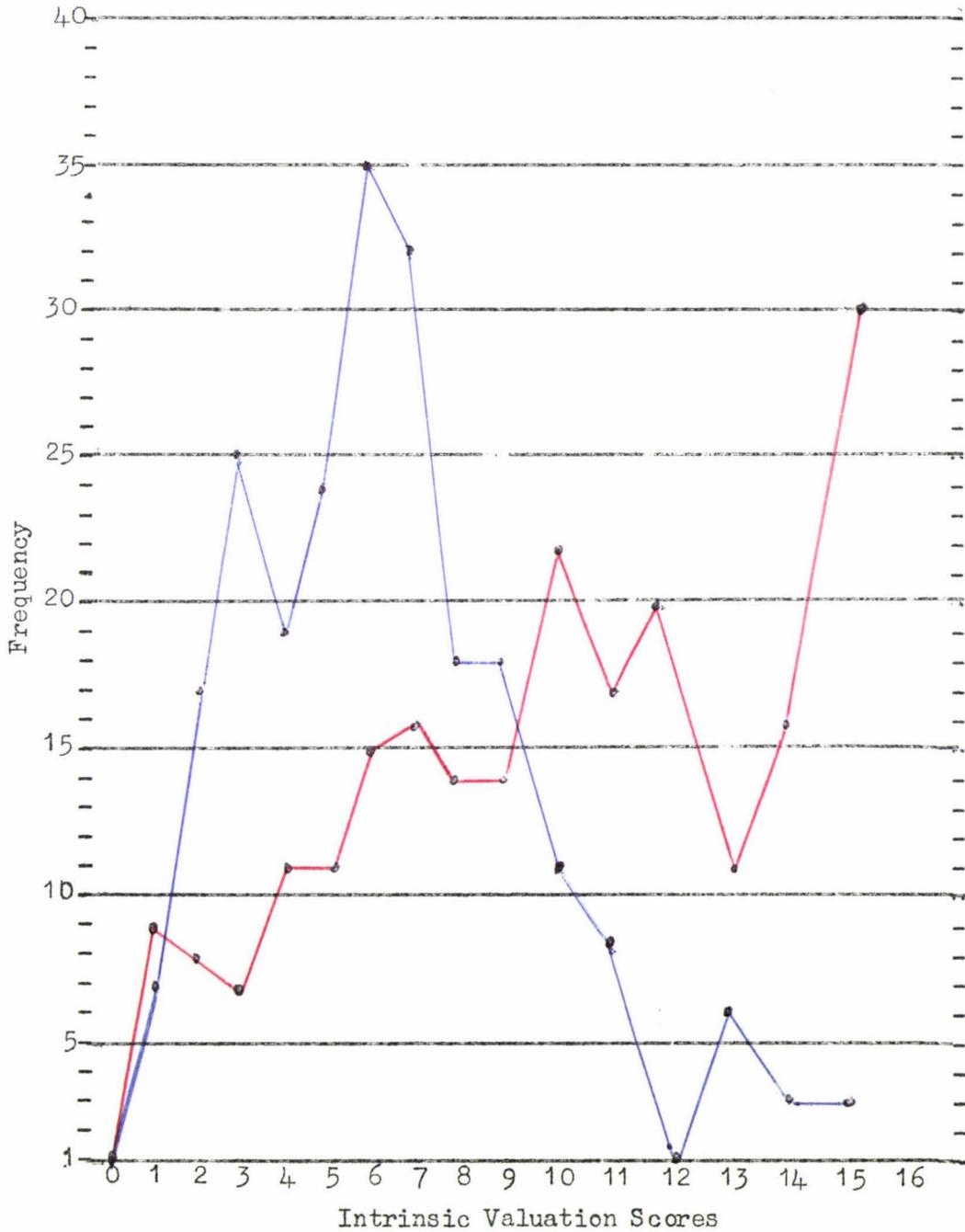
Valuation Mode scores were derived from responses to the sixteen questionnaire items and every response registered either an intrinsic or an extrinsic preference. The fact that each item forced respondents to choose between two alternatives made it possible to count only one kind of preference and determine the other arithmetically. Scores were expressed in terms of the intrinsic valuation mode and extrinsic valuation mode was determined by subtracting the intrinsic scores from 16, the total possible score.

A score of eight indicated a neutral, or balanced position between intrinsicness and extrinsicness. The graph in Table 9 shows the intrinsic valuation scores obtained by parents and pupils on the sixteen Valuation Mode items.

Table 9 appears on page 65A.

Table 9

Intrinsic Valuation: Frequencies
scored by Parents and Pupils.



— = Pupils Mean = 6.134 N = 224

— = Parents Mean = 9.246 N = 224

The intrinsic valuation scores ranged from zero to fifteen. This means that of the 224 parents and pupils there were some who were totally extrinsic in valuation mode and thus failed to choose any of the intrinsic educational aims. On the other hand, since no respondents achieved a score of sixteen, it is apparent that no parents or pupils were completely intrinsic in valuation mode. Furthermore, this implies that there were no respondents who failed to register at least a few extrinsic preferences.

A score of eight indicates a balanced position between the two valuation modes. A score of less than eight means that the respondent inclines toward extrinsicness while a score greater than eight indicates a tendency toward intrinsicness. The line showing pupils' scores is highest just to the left of the middle score of eight. From this it is evident that the greatest number of pupils obtained scores of less than eight in intrinsic valuation. Thus they may be described as extrinsic in valuation mode. For parents the reverse is true. The line showing parents' score rises to the right, registering intrinsic valuation scores greater than eight. This means that the greatest number of parents are intrinsically oriented toward educational values.

The neutral central position of eight points was reached by only fourteen parents and eighteen pupils, or less than ten per cent of the combined total. Consequently it can be said that over ninety per cent of the population sample were found to register either an

intrinsic or an extrinsic valuation mode.

The difference between the responses of parents and pupils is most clearly shown in their respective mean scores. Pupils' mean intrinsic valuation score is 6.134, nearly two places below the midpoint of eight. Parents, on the other hand, have a mean intrinsic valuation score of 9.264, more than one point above the centre. Pupils are extrinsic and parents are intrinsic but pupils' degree of extrinsicness is greater than is the degree of intrinsicness registered by parents.

Belief Index

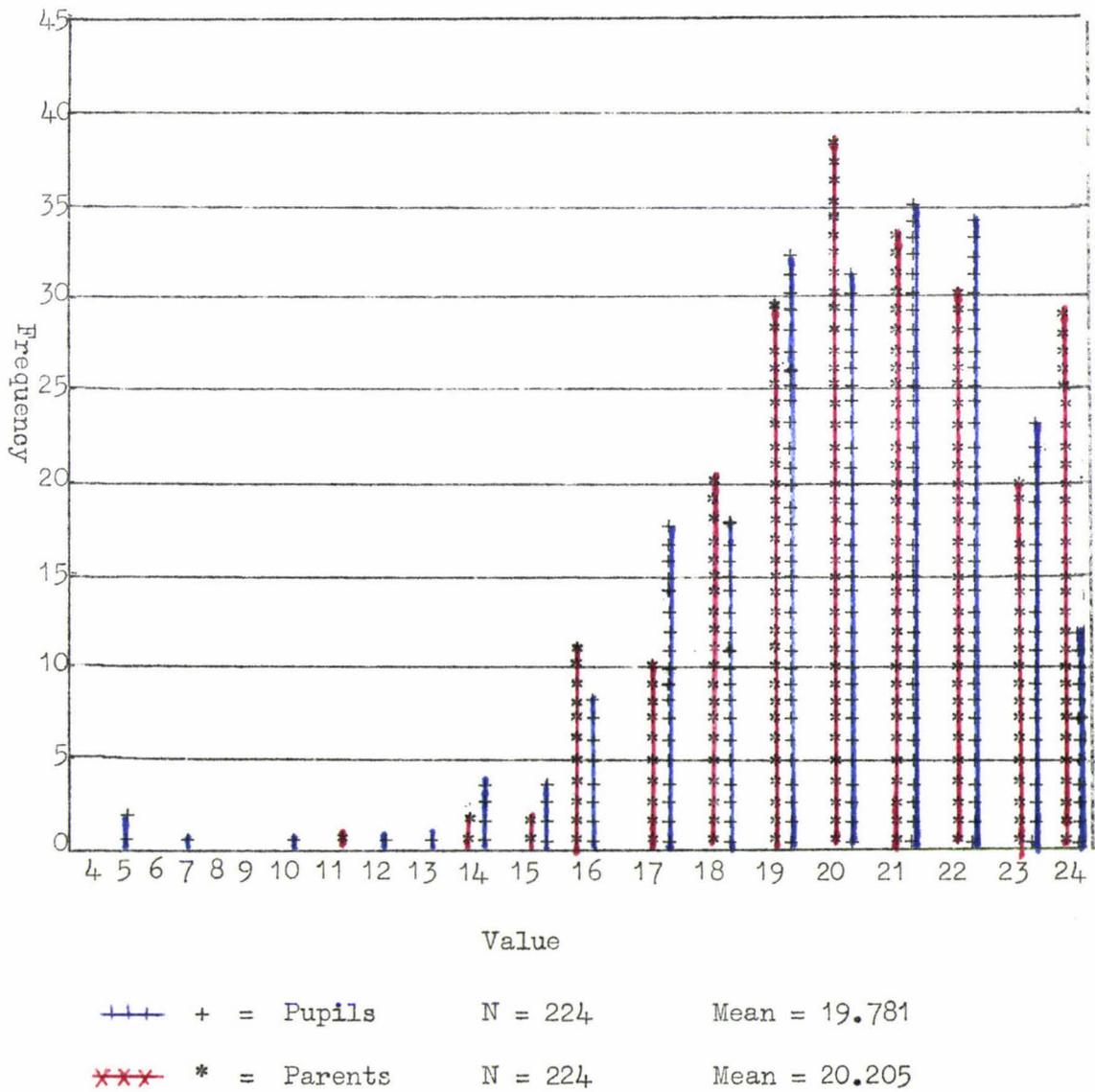
Belief Index scores were derived from the Belief Index scale described in Chapter IV. This scale attempted to measure the degree to which respondents believe in the value of education and it provided questions about the value of education in four general areas. The four questions presented were intentionally imprecise because the purpose was to measure the acceptance of what were assumed to be universal cultural beliefs. The aim was not to discriminate between the four dimensions but to measure over all acceptance or rejection of common beliefs about the value of education.

Responses were registered on a one to six Lickert-type scale provided for each question. Consequently scores had a potential range of from four to twenty-four with low scores indicating that education was perceived to have little value in any of the four dimensions queried.

The response patterns derived from the scores of parents and pupils on the Belief Index scale are shown in Table 10.

Table 10

Belief Index: Frequencies scored by
Parents and Pupils



Belief Index scores of parents and pupils tended to be high with 96% of the population attaining scores of sixteen or more points out of a possible score of twenty-four.

Pupil responses had a wider range than those of parents. Six pupils had scores of less than thirteen while only one parent dropped below that level. The lowest score registered by any pupil was five, but no parent had a score of less than eleven. Because these responses at the low end of the scale were so few in number both groups were not only high on the Belief Index but they registered mean scores which were less than one point apart. When rounded off to the nearest full point both parents and pupils had mean scores of twenty.

The high Belief Index scores attained by both parents and pupils is in accord with the theoretical assumptions underlying the study. These presume that cultural beliefs are universally held and are independent of age or social role.

Salient Findings in Specified Relationships

Having looked at the population characteristics and at the response patterns of the parents and pupils, it is appropriate to examine the specified sets of relationships.

The primary analysis procedure used combines standard multiple regression and stepwise regression¹. Each regression calculation consisted of two steps: i) a square correlation matrix was assembled or computed through the use of the variables list. ii) One or more

¹ Burroughs 6700 SPSS sub-programme REGRESSION

regression calculations was made using the assembled matrix through the use of regression lists. The results obtained from these two steps are presented below in that order.

Correlation Coefficients

Table 11 shows the correlation coefficients for the nine variables measured by the questionnaire.

Table 11

Variable Inter-correlations

	Pup. Int.	Ach.	SES	Class Within Form	Par. Int.	Par. Sex	Pup. Bel. Ind.	Par. Bel. Ind.	Pup. Sex
Pup. Int.									
Ach.	.01								
SES	.00	.02							
Class	.09	.19	.29 ^{***}						
Par. Int.	.24 ^{**}	.07	.14	.20 ^{**}					
Par. Sex	.18	.05	.10	.09	.06				
Pup. Belf.	.00	.33 ^{***}	.05	.22 ^{**}	.02	.00			
Par. Belf.	.00	.03	.10	.01	.04	.08	.06		
Pup. Sex	.00	.12	.03	.18	.04	.10	.12	.03	

* = $p < .05$

*** = $p < .01$

Of the thirty-six correlation coefficients presented in Table 11 only two reached the .01 level of significance: Class within the Form correlated with SES ($r = .29$), and Pupils' Belief Index correlated with Achievement ($r = .33$). Three other coefficients reached the .05 level of significance: Class correlated with Parents' Intrinsic Valuation ($r = .20$), Class correlated with Pupils' Intrinsic Valuation ($r = .22$), and Pupils' Intrinsic Valuation correlated with Parents' Intrinsic Valuation ($r = .24$). However, it must be noted that even these correlation coefficients are still quite low, implying a relatively weak correlation.

Of the remaining correlations only three approached the .05 level of significance: Class correlated with Achievement ($r = .19$), Sex of Parent correlated with Pupils' Intrinsic Valuation ($r = .18$), and Sex of Pupil correlated with Class ($r = .18$).

All of the other twenty-eight correlation coefficients were very low, ranging from $r = .00$ to $r = .12$.

Six of the nine variables correlated were critical in terms of the relationships being tested. These variables were: i. SES, ii. Achievement, iii. Pupils' Intrinsic Valuation, iv. Parents' Intrinsic Valuation, v. Belief Index scores for Parents, and vi. Belief Index scores for pupils.

The research discussed in Chapter II indicated possible correlations between the other variables and attitudes toward education, but such relationships are only of secondary interest because they lie outside the theoretical framework upon which the present study is based.

These variables, Sex and Class within the Form, were included in the matrix of correlation coefficients to allow for the possibility that statistically significant correlations might exist between these variables and others included in the hypotheses. Should such correlations be manifested they could be potentially useful in the interpretation of the findings.

The data contained in the matrix of correlation coefficients lends little support to the hypothesized relationships between the variables. These relationships are discussed individually below.

H.1. Valuation of education, extrinsically or intrinsically, is a function of SES.

H.1.1. The lower the SES the greater the probability that education will be valued extrinsically.

H.1.2. The higher the SES the greater the probability that education will be valued intrinsically.

These relationships were in no way supported by the data. The correlation coefficient obtained for these two variables was $r = .00$. No correlation whatsoever was registered. This hypothesis is therefore not confirmed.

H.2. Educational achievement is a function of the valuation of education, extrinsically or intrinsically.

H.2.1. The higher the intrinsic valuation the higher the achievement level.

H.2.2. The higher the extrinsic valuation the lower the achievement level.

The correlation coefficient obtained for these two variables, $r = .01$, provided no support for the predicted relationship. The hypothesis is therefore not confirmed.

H.3. The Belief Index of the value of education is not a function of either SES or Achievement.

H.3.1. The Belief Index of the value of education will show no significant relationship with either SES or Achievement.

Lack of any correlation coefficients of statistical significance for correlations between Parents' Belief Index and the other variables lends support to H.3. However, the correlations between Pupils' Belief Index and other variables registered in the matrix of correlation coefficients do not provide the same support for H.4. Two variables correlate with Pupils' Belief Index at statistically significant levels: i. Achievement and Pupils' Belief Index have a correlation coefficient of $r = .33$ ($p < .01$ sig.), ii. Class and Pupils' Belief Index have a correlation coefficient of $r = .22$ ($p < .05$ sig.). Both of these relationships are contrary to the hypothesized independence of Belief Index scores. The hypothesis is therefore not confirmed.

H.4. Pupil valuation mode, extrinsic/intrinsic, is a function of parental valuation.

H.4.1. Pupil valuation modes will be congruent with those of their parents.

The correlation coefficient obtained for these two variables, $r = .24$, is significant at the .05 level and provides support for the hypothesized relationship. This hypothesis is therefore confirmed.

Other correlation coefficients not discussed so far concern correlations between Class within the Form and two other variables: SES ($r = .29$, $p < .01$) and Parents' Intrinsic Valuation ($r = .20$, $p < .05$). Neither of these relationships was predicted because Class, as explained earlier, was not a variable included in the hypothesis.

Multiple Regression Analysis

The correlation matrix only indicates the correlation of each of the variables with each other. In order to measure the degree to which the dependent variable is associated with any one independent variable it is necessary to make allowances for its relation to the other independent variables. Multiple regression allows for this duplication by eliminating the effects of each variable in turn.

Multiple regression analysis serves to sum up all the evidence of any number of observations and to express the extent to which differences in the dependent variable tend to be associated with differences in each of the other variables. The closeness of association between the dependent and each of the independent variables, after the effects of the other variables have first been removed, are indicated by the Beta coefficient and by the F ratio.

Using the intrinsic valuation scores of pupils as the dependent variable, multiple regression analysis was applied stepwise to each of the remaining eight variables. This statistical procedure was used in order to ascertain the extent to which each dependent variable

contributed to the variation of the independent variable. The results are shown in Table 12.

Table 12

Stepwise Multiple Regression Analysis

Dependent Variable: Pupils' Intrinsic Valuation:

Independent Variables	Beta	F Ratio	Sig.
Par. Int.	0.26943	16.108	.01 [⊠]
Par. Sex	0.20671	9.796	.01 [⊠]
SES	0.06681	0.951	
Class	-0.03134	0.187	
Par. Belf.	0.03374	0.298	
Pup. Sex	-0.03292	0.240	
Achievement	-0.03228	0.214	
Pup. Belf.	-0.03131	0.201	

Reported Significance [⊠] = only levels of sig. < .05.

Of the eight independent variables included in the stepwise multiple regression analysis only two made any significant contribution to variation in the dependent variable, Pupils' Intrinsic Valuation. Parents' Intrinsic Valuation made the greatest contribution with an F ratio of 16.10 $p < .01$, and Sex of Parent contributed considerably less with an F ratio of 9.79, $p < .01$. None of the other variables made any significant contribution.

The order in which the independent variables are listed was determined by the size of the contribution they made to variation in the dependent variable. In this case the order in which the last six variables appears has no importance because of the insignificance of

their contribution.

Whereas the correlation matrix indicated the presence of a significant relationship between Parents' Intrinsic Valuation and Pupils' Intrinsic Valuation, it is only in the results of the multiple regression analysis that Sex of Parent is identified as making a significant contribution to variation in the dependent variable, Pupils' Intrinsic Valuation.

The results shown in Table 12 further validate the fact that the major hypotheses have not been supported by the data. Neither SES nor Achievement made any significant contribution to Pupils' Intrinsic Valuation.

Crosstabulations

Examination of the results produced by the correlation matrix and the multiple regression analysis did not offer any support for H.1 and H.2., the two major hypotheses. This fact provoked a closer scrutiny of the nature of the Intrinsic Valuation scores and subsequently a further statistical analysis was attempted in an effort to extract all useful data relevant to the hypotheses.

Initially Intrinsic Valuation scores were not grouped in levels. However, H.1 holds that high SES levels will predict to high Intrinsic Valuation levels and H.2 holds that High Intrinsic Valuation levels will predict to high Achievement levels. Therefore analysis of grouped Intrinsic Valuation scores seemed warranted. In order to test relationships between high Intrinsic Valuation

scores and high levels of Achievement and SES it was necessary to establish which Intrinsic Valuation scores could be classed as high.

Intrinsic Valuation scores had a range of from zero to sixteen. Because it was not possible to divide the range of seventeen scores into three equal groups the most logical division placed six units in each of the high and low groupings and left five units for the middle, or medium range. Tables 13 and 14 show the numbers and percentages of parents and pupils found in each of the high, medium and low Intrinsic Valuation groups.

Table 13

Pupils' Intrinsic Valuation scores with High, Medium and Low Groupings Indicated.

	Value	Absolute Frequency	Rel. Freq. (Per Cent)	Group Freq.	Group Per Cent
High	16	0	0.0	17	7.6
	15	2	0.9		
	14	2	0.9		
	13	5	2.2		
	12	1	0.4		
	11	7	3.1		
Medium	10	11	4.9	114	50.9
	9	18	8.0		
	8	18	8.0		
	7	32	14.3		
	6	35	15.6		
Low	5	24	10.7	93	41.5
	4	19	8.5		
	3	25	11.2		
	2	17	7.6		
	1	7	3.1		
	0	1	0.4		
Total		224	100.0	224	100.0

Table 13 shows the way in which Pupils' Intrinsic Valuation scores have been divided into high, medium and low groups. The seventeen Intrinsic Valuation scores from 11 to 16 constitute the high group, and make up 7.6% of the total. The medium group is composed of the 114 Intrinsic Valuation scores between 6 and 10 inclusive. This group constitutes 50.9% of the total. The low Intrinsic Valuation group is made up of the 93 scores between 0 and 5 inclusive, and they constitute 41.5% of the total.

Table 14

Parents' Intrinsic Valuation Scores with High, Medium and Low Groupings Indicated.

	Value	Absolute Frequency	Rel. Freq. (Per Cent)	Group Freq.	Per Cent
High	16	0	0.0	95	42.9
	15	30	13.4		
	14	16	7.1		
	13	12	5.4		
	12	20	8.9		
	11	17	7.6		
Medium	10	22	9.8	81	36.2
	9	14	6.3		
	8	14	6.3		
	7	16	7.1		
	6	15	6.7		
Low	5	12	5.4	48	21.4
	4	12	5.4		
	3	7	3.1		
	2	8	3.6		
	1	9	4.0		
	0	0	0.0		
	Total	224	100.0	224	100.0

Table 14 indicates the way in which Parents' Intrinsic Valuation scores have been divided into high, medium and low groups. The high group is made up of the 95 Intrinsic Valuation scores from 11 to 16 inclusive. This group constitutes 42% of the total number. The medium group is made up of the 81 scores from 6 to 10 inclusive. This group constitutes 36.2% of the total. The low group is made up of the 48 scores from 0 to 5 inclusive. They constitute 21.4% of the total number.

In order to compare the three levels of Intrinsic Valuation with SES, the six Elley-Irving levels were reduced to high, medium and low groups by collapsing levels one and two, three and four, five and six respectively. In a similar fashion Class within the Form, which consists of nine classes based upon different curriculum emphasis, was reduced to three groups. Group 1 was composed of 4L (Latin), 4G (German), and 4S (Science), Group 2 was composed of 4F (French), 4P (Professional), and 4C (Commercial), Group 3 was composed of 4T (Technical), 4W (Woodshop) and 4H (Homecraft). The three groups represent three curriculum categories: Academic, General and Practical respectively and classes were allotted to the three groups according to their respective emphasis.

Achievement levels remained the same as described in Chapter III.

The statistical analysis used to test the relationships between levels of Intrinsic Valuation and the other variables was performed by means of the B6700 SPSS sub-programme CROSSTABS. This computer

programme produces 2 way to n way joint frequency distributions for either alpha numeric or numeric values. For each variable compared the crosstabulations include the Chi-square, contingency coefficient and level of significance. Tables 15, 16 and 17 present the cross-tabulations of Intrinsic Valuation with SES, Achievement and Class respectively.

Table 15

Pupils' Intrinsic Valuation and SES.

Int. Val.	Socio-Economic Status			Row Total	
	High	Medium	Low		
High	Count	4	12	1	17
	Row %	23.5	70.6	5.9	
	Col. %	12.5	7.0	5.0	
	Total %	1.8	5.4	0.4	7.6
Medium	Count	14	90	10	114
	Row %	12.3	78.9	8.8	
	Col. %	43.8	52.3	50.0	
	Total %	6.3	40.2	4.5	50.9
Low	Count	14	70	9	93
	Row %	15.1	75.3	9.7	
	Col. %	43.8	40.7	45.0	
	Total %	6.3	31.3	4.0	41.5
Column	32	172	20	224	
Total	14.3%	76.8%	8.9%	100.0%	

Chi-square = 1.79651, df = 4
 Contingency Coefficient = 0.08920
 Significance = 0.7731

Table 15 compares the three levels of SES with three levels of Intrinsic Valuation. The total number of cases in each dimension is the same, 224, but their distribution differs considerably. Whereas only 17 respondents achieved high Intrinsic scores, there were 32 respondents in the high SES group. In the two low groups we find 93 low Intrinsic scores as compared with only 20 low SES members. This disparity of weighting in the high and low groups results in only four cases where respondents are high in both dimensions and only nine cases where they are low in both dimensions. Since the largest number of respondents fall into the medium, or middle groups - 114 with medium Intrinsic scores and 172 in medium SES levels - it is not surprising that the greatest degree of congruency occurs at the interstices of these two central groups. Over 40 percent of the total population is located in the medium levels of SES and Intrinsic Valuation.

The most critical indices of comparison are the row and column percentages in the cells where the two highs and the two lows are combined. These show that: i) 23% of the high intrinsic Valuation scores were obtained by respondents with high SES levels whereas only 12.5% of the respondents with high SES levels were included in the high Intrinsic group. ii) only 9% of the low Intrinsic group were low in SES while 45% of the low SES respondents registered as low in Intrinsic Valuation. The discrepancy between these percentages indicates a lack of positive correlation between levels of SES and Intrinsic Valuation.

Table 16

Pupils' Intrinsic Valuation and Achievement

Int. Val.		Achievement			Row Total
		High	Medium	Low	
High	Count	4	9	4	17
	Row %	23.5	52.9	23.5	
	Col. %	12.5	6.9	6.6	
	Total %	1.8	4.0	1.8	7.6
Medium	Count	15	64	35	114
	Row %	13.2	56.1	30.7	
	Col. %	46.9	48.9	57.4	
	Total %	6.7	28.6	15.6	50.9
Low	Count	13	58	22	93
	Row %	14.0	62.4	23.7	
	Col. %	40.6	44.3	36.1	
	Total %	5.8	25.9	9.8	41.5
	Column	32	131	61	224
	Total	14.3%	58.3%	27.2%	100.0%

Chi-square = 2.58673 df = 4

Contingency Coefficient = 0.10685

Significance = 0.6292

In Table 16 the three levels of Achievement are compared with three levels of Intrinsic Valuation. The number of cases in each dimension is the same, 224, but there is a marked difference in their distribution within the cells. When the two high groups are compared we find 17 in the high Intrinsic Valuation group and 32 in the high Achievement group. In the medium groups there are 114 Intrinsic scores

and 131 Achievement ratings. The low Intrinsic Valuation group numbered 93 and the low Achievement group numbered 61.

The highest degree of congruency between the two groups is registered in the central cell of the table where the two medium levels are combined. There 28% of the total population is found. This relatively low percentage is explained by the fact that nearly 26% of the population is medium in Achievement and low in Intrinsic Valuation. These two cells, medium/medium and medium/low, account for more than 50% of the total population.

Once more the row and column percentages for the highs, and the lows are too disparate to be considered as complementary. The four respondents who were high in both Achievement and Intrinsic Valuation represented 23.5% of the high Intrinsic group but only 12.5% of the high Achievement group. The twenty-two respondents who were low in both Achievement and Intrinsic Valuation represented only 23.7% of the low Intrinsic group as compared to 36.1% of the low Achievement group.

These discrepancies point to a lack of positive correlation between levels of Intrinsic Valuation and levels of Achievement.

Table 17

Pupils' Intrinsic Valuation and Class within the Form

Int. Val.		Class within the Form			Row Total
		Group One	Group Two	Group Three	
		(Academic)	(General)	(Practical)	
High	Count	11	2	4	17
	Row %	64.7	11.8	23.5	
	Col. %	11.7	2.4	8.9	
	Total %	4.9	0.9	1.8	7.6
Medium	Count	50	42	22	114
	Row %	43.9	36.8	19.3	
	Col. %	53.2	49.4	48.9	
	Total %	22.3	18.8	9.8	50.9
Low	Count	33	41	19	93
	Row %	35.5	44.1	20.4	
	Col. %	35.1	48.2	42.2	
	Total %	14.7	18.3	8.5	41.5
	Column	94	85	45	224
	Total	42.0%	37.9%	20.1%	100.0%

Chi-square = 7.29588 df = 4
 Contingency Coefficient = 0.17760
 Significance = 0.1211

After grouping the nine classes within the Form according to their curriculum emphases these groups were compared with high, medium and low groups of Intrinsic Valuation scores in order to further explore the possibility of a significant relationship between Intrinsic Valuation and course content.

In each dimension the total sample was 224 but again the distribution of the sample was quite different within the two dimensions. Groups one, two and three of the Form classes had respectively 94, 85 and 45 pupils, whereas the high, medium and low groups of Intrinsic Valuation contained respectively 17, 114 and 93 pupil respondents. If we look at the three critical cells where high, medium and low Intrinsic Valuation levels cross with Groups one, two and three respectively, it is apparent that the row and column percentages diverge considerably in each case. In the first instance 64% of the total high Intrinsic scores must be compared with only 11% of the total pupils in Group one classes. In the central cell the percentages are closer; 36.8% of the number are medium Intrinsic in valuation and 49.4% come from Group two classes. When low Intrinsicness and Group three classes are compared the percentages are 20.4 and 42.2. It is doubtful that any of these proportions could be regarded as pointing to a close relationship between class groupings and Intrinsic Valuation levels.

A study of the crosstabulations presented in Tables 15, 16 and 17 does not reveal any significant association between the dependent variable, Pupils' Intrinsic Valuation, and any of the other variables. Even though each of the variables was grouped according to three levels, the predicted relationships have not been manifested.

Item Analysis and Frequency Distributions

The matrix of cathexis described in Chapter III contained two dimensions, object and mode. The object dimension utilized the three exchange commodities, Status, Affect and Utility plus a task component. The mode dimension consisted of two value orientations: intrinsic and extrinsic. The eight cathectic objects derived from the matrix of cathexis, when paired, provided sixteen forced choice items. Each item when subjected to a frequency distribution analysis allows object and mode dimension preferences to be ascertained. Tables 18, 19 and 20 provide this information.

Table 18

Cathectic Objects: Frequency Distribution of Pupils' Responses

Item	Extrinsic Valuation			Intrinsic Valuation		
	Object	Frequency	Percent	Object	Frequency	Percent
1.	Task	147	4	Task	77	2
2.	Utility	103	3	Utility	121	3
3.	Affect	192	6	Status	32	1
4.	Status	146	4	Affect	78	2
5.	Utility	160	4	Status	64	2
6.	Task	89	3	Utility	135	3
7.	Status	124	4	Task	100	3
8.	Affect	160	4	Affect	64	2
9.	Status	72	2	Utility	152	4
10.	Task	160	4	Status	64	2
11.	Affect	127	4	Task	97	3
12.	Utility	53	1	Affect	171	6
13.	Affect	75	2	Utility	149	4
14.	Task	160	4	Affect	64	2
15.	Utility	138	4	Task	86	2
16.	Status	150	4	Status	84	2
Total		2,046	57%		1,538	43%

N = 224

The questionnaire provided opportunity for sixteen preferences to be indicated. There were 224 pupils in the sample; thus a total of 3,584 responses were elicited. ($N \times$ number of items.) Out of this total number of preference responses, cathectic objects in the Extrinsic mode were chosen 2,046 times (57%). The remaining preferences which numbered 1,538 (or 43%) were given to objects in the Intrinsic mode.

Each cathectic object appeared four times in each mode. In every case it was paired with a different object representing the other valuation mode. For this reason each separate object tended to receive four different scores. These scores varied according to the object with which it had been paired. In the case of Extrinsic Task which appeared in items 1, 6, 10 and 14 the following scores were received: 147, 89, 160 and 160. This indicates that the preference for the Extrinsic Task object was dependent upon the appeal of the object with which it was compared. When compared with Intrinsic Status and Intrinsic Affect in items 10 and 14 respectively, Extrinsic Task obtained 160 preference scores. But when compared with Intrinsic Utility in item 6, Extrinsic Task obtained only 89 preference scores.

Every Extrinsic object was paired once with its counterpart. For example, in item 1, Extrinsic Task appeared in opposition to Intrinsic Task. It was in such cases (Items 1, 2, 8 and 16) that the pattern of pupils' responses became evident. With one exception, viz. Item 2, the Valuation mode preferred in these items was Extrinsic.

But when Extrinsic Utility was matched with Intrinsic Utility it was Intrinsic Utility which received the higher preference with 121 points over against 103. Furthermore, in the Intrinsic mode it was only Utility which was preferred over the other objects with which it was paired. Since each object appeared four times in each valuation mode it is only by summing these frequencies that it is possible to identify precisely the degree of preference given to objects within each mode. These summed frequencies appear in Table 18.1.

Table 18.1

Cathectic Objects: Summated Frequencies of Pupils' Responses

Extrinsic Valuation			Intrinsic Valuation		
Object	Frequency	Percent	Object	Frequency	Percent
Status	482	14	Status	244	7
Affect	554	15	Affect	377	10
Utility	454	12	Utility	557	16
Task	556	16	Task	360	10
Total	2,046	57%		1,538	43%

The scores which each cathectic object received within each item have been combined according to the two dimensions represented: object and mode. In the Extrinsic Valuation mode two object categories received nearly identical preference ratings: Affect 554 and Task 556. Of the remaining two, Status, with 482 points, was more favoured than Utility, with 454 points. In the Intrinsic Valuation mode there was more divergence between the scores which ranged from 224 for Status to 557 for Utility. The remaining two objects received very similar ratings:

Affect with 377 and Task with 360. The most highly preferred cathectic object was Intrinsic Utility with a preference score of 557, while the least preferred object was Intrinsic Status with a preference score of 244.

The item analysis and frequency distribution data which is provided for pupils' responses in Tables 18 and 18.1 is also provided for the parents' responses in Tables 19 and 19.1.

Table 19

Cathectic Objects: Frequency Distribution of Parents' Responses

Item	Extrinsic Valuation			Intrinsic Valuation		
	Object	Frequency	Percent	Object	Frequency	Percent
1.	Task	104	3	Task	120	3
2.	Utility	50	1	Utility	174	5
3.	Affect	93	3	Status	131	4
4.	Status	65	2	Affect	159	4
5.	Utility	98	3	Status	126	4
6.	Task	71	2	Utility	153	4
7.	Status	72	2	Task	152	4
8.	Affect	117	3	Affect	107	3
9.	Status	38	1	Utility	186	5
10.	Task	121	3	Status	103	3
11.	Affect	100	3	Task	124	3
12.	Utility	108	3	Affect	116	3
13.	Affect	61	2	Utility	163	5
14.	Task	130	4	Affect	94	3
15.	Utility	85	2	Task	139	4
16.	Status	69	2	Status	155	4
Total		1,382	39%	2,202		61%

There were 224 parents who completed the 16 item questionnaire thus providing a total of 3,584 responses to be distributed among the thirty-two cathectic objects which were presented. These cathectic objects presented in sixteen different pairs utilized both the intrinsic and extrinsic valuation mode in every case. The frequency scores indicate the number of times the objects in each item were chosen. Because each object appeared four times in each mode the same objects tended to attain different scores depending upon the object with which it was paired. For example, the scores for Extrinsic Task ranged from 71, when paired with Intrinsic Utility, to 130 when paired with Intrinsic Affect.

Every Extrinsic object was paired once with its counterpart. Therefore items 1, 2, 8 and 16 each contained only one object category: Task, Utility, Affect, and Status respectively. The responses to these items point the direction of overall parental preferences. With the exception of Item 8 (Affect), parents chose Intrinsic objects. Although in item 8 Extrinsic Affect (117) registered a higher preference than did Intrinsic Affect (107), the total of the Intrinsic mode preferences was 2,202 (61%), nearly two times greater than the number of Extrinsic mode preferences, 1,382 (39%).

The highest and the lowest scores were in Item 9 where Intrinsic Utility was paired with Extrinsic Status. The former received 186 choices and the latter only 38.

In order to identify precisely the degree of preference given to objects within each mode it is necessary to sum the object scores

within each valuation mode. These summed frequencies appear in Table 19.1.

Table 19.1

Cathectic Objects: Summated Frequencies of Parents' Responses

Extrinsic Valuation			Intrinsic Valuation		
Object	Frequency	Percent	Object	Frequency	Percent
Status	244	7	Status	515	14
Affect	371	10	Affect	476	13
Utility	341	10	Utility	676	19
Task	426	12	Task	535	15
Total	1,382	39		2,202	61

Within each valuation mode the preference scores for each object category have been totalled. From these totals it is possible to assess which cathectic objects in each mode are the most preferred by parents. Of the Extrinsic objects Task had the highest number of preferences (426) and Status had the lowest (244), while Affect and Utility were not far apart with 371 and 341 points respectively.

Of the Intrinsic objects, Utility was the most preferred (676) and Affect least preferred (476). Little difference appeared in the number of preferences given to Status (515) and Task (535).

The cathectic object most preferred by parents was Intrinsic Utility (676) and the object least preferred was Extrinsic Status (244). It is interesting to note that all of the Intrinsic scores were higher than any of the Extrinsic scores.

Tables 18.1 and 19.1 respectively give an indication of the pupils' and the parents' preferred cathectic objects. In order to compare the preferences of parents and pupils these eight types of educational aims have been ranked according to the frequency with which they were chosen by parents and pupils, and this rank ordering of preference from the most preferred to the least preferred is presented in Table 20.

Table 20

Preference order ranking of cathectic objects.

Rank	Parents	Freq.	(%)	Pupils	Freq.	(%)
1.	Int. Utility	676	(19)	Int. Utility	557	(16)
2.	Int. Task	535	(15)	Ext. Task	556	(16)
3.	Int. Status	515	(14)	Ext. Affect	554	(15)
4.	Int. Affect	476	(13)	Ext. Status	482	(13)
5.	Ext. Task	426	(12)	Ext. Utility	454	(12)
6.	Ext. Affect	371	(10)	Int. Affect	377	(11)
7.	Ext. Utility	341	(10)	Int. Task	360	(10)
8.	Ext. Status	244	(7)	Int Status	244	(7)
	Total	3,584	100		3,584	100

The rank ordering of preference frequencies shows some interesting similarities and differences between parents and pupils. The total spread of Frequencies is greater for parents than it is for pupils although for both groups the least preferred object had the same number of preferences, 244.

The most preferred cathectic object, Intrinsic Utility was the same for both groups, but it was chosen 676 times by parents as compared

to only 557 times by pupils.

In the second rank there was agreement upon the object dimension, Task, but in the mode dimension the two groups differed. Parents preferred Intrinsic Task while pupils preferred Extrinsic Task. This pattern was reversed at the lower end of the preference scale. In the sixth and eighth ranks there was agreement upon the objects, Affect and Status, but disagreement upon the mode. This time it was the parents who were extrinsic and it was the pupils who were intrinsic. Thus with the exception of the first ranking cathectic object, Intrinsic Utility, parents and pupils tended to be opposed in valuation mode in each of the eight ranked positions.

It is only in the first and the fifth ranking objects that parents and pupils had the same valuation modes. In the first rank there was agreement upon both object and mode. At the fifth rank there was mode agreement but not object agreement. It is at the fifth place that the predominant valuation modes of both groups change. Parents move from the Intrinsic to the Extrinsic mode and pupils move from the Extrinsic to the Intrinsic mode.

Until this point the cathectic object preferences of parents and pupils have been tabulated in terms of the combined object and mode dimensions. Since these cathectic objects utilized three exchange commodities, Status, Affect and Utility, plus a Task component, it may be of interest to ascertain the rank ordering of these objects independent of the valuation mode dimension.

Table 21 presents the number of times each commodity in the object dimension was chosen by parents and by pupils. Table 21.1 gives the summed totals for both the parents' and pupils' preferences and thus indicates the overall ranking of the exchange commodities used plus the Task component.

Table 21

Rank ordering of Cathectic Object Preferences independent of the valuation mode dimension.

Rank	Parents	Total Freq.	(%)	Pupils	Total Freq.	(%)
1.	Utility	1,017	(28)	Utility	1,011	(28)
2.	Task	961	(26)	Affect	931	(25)
3.	Affect	847	(23)	Task	916	(25)
4.	Status	759	(21)	Status	726	(20)
Total		3,584	(100)	3,584		(100)

Once more parents and pupils agree upon the most preferred and the least preferred objects, which are Utility and Status respectively. The middle rankings show Task and Affect reversed for the two groups with Task taking second place in parents' preferences and third place in pupils'. However, where pupils are concerned the difference between the rank of Affect and Task is not great: 931 and 916 choices respectively.

Where parents are concerned the greater difference between the second and third ranking objects, 961 vs. 847, has influenced the final, or overall, ranks obtained by the four commodities in the object dimension. See Table 21.1 below.

Table 21.1

Rank ordering of combined parent/pupil preferences for cathectic objects, independent of valuation mode.

Rank	Object	Total Parent/Pupil Preference	
1.	Utility	2,028	(28%)
2.	Task	1,877	(26%)
3.	Affect	1,778	(25%)
4.	Status	1,485	(21%)
Total		7,168	(100%)

N = 448

The final total of all the responses of both parents and pupils was broken down according to the three exchange commodities, Status, Affect, Utility and the Task component. Then these totals were used to determine the rank order of preferences. The overall preferred commodity was Utility, Task came second and Affect third. The rank order was the same as that for parents' responses, but the proportions found in each category differed slightly.

Summary of Findings re Specified Relationships

Three types of statistical analysis were applied to the data by means of SPSS Computer Programmes. These programmes provided: 1. A correlation matrix. 2. A stepwise multiple regression analysis. 3. Crosstabulations with chi-square and contingency coefficients.

Of the four hypotheses elaborated in Chapter III, it is only in the case of H.4 that the data justifies the rejection of the null

hypothesis. Parents' and pupils' valuation mode scores were shown to be positively correlated at a significance level of greater than .05. Otherwise the predicted relationships between variables were not confirmed. Furthermore, relationships which had not been predicted appeared. These unpredicted relationships primarily concerned two variables, Belief Index and Class within the Form. Each of these variables proved to be significantly associated with other variables. Pupils' Belief Index showed a significant correlation with both Achievement and Class within the Form. These correlations were contrary to H.3. which predicted no relationship between Belief Index and any other variable. Class within the Form showed a significant correlation with SES and Parents' Intrinsic Valuation. Neither of these correlations were included in any of the four hypotheses.

Chapter V has presented the data obtained from the measurement instrument and has described the results of the statistical procedures used to analyze the data. Chapter VI discusses and interprets the implications of these findings.

CHAPTER VISummary and Conclusions

The central themes of attitude theory with which this investigation has been concerned are two-fold; i) the universality of cultural values, ii) the dichotomous nature of valuation. Accordingly the study initially attempted to integrate Merton's theory of the contribution made by the social structure to the cultural goals and means by which men live, and Lewis' theory of valuation. This discussion led to the suggestion that two factors are at work in determining attitudes: i) the existence of culturally established and collectively endorsed goals and means. ii) the existence of two modes of valuation orientation, extrinsic and intrinsic.

The culturally accepted goals of our society were seen to centre around success, and the culturally endorsed means for reaching success was seen to be education.

In addition, a possible relationship between modes of educational valuation and SES levels was presumed to exist. Since SES levels incorporate levels of educational attainment and since educational attainment is not unrelated to school achievement, it seemed reasonable to suggest that there may be a causal relationship between valuation modes and school achievement.

The prediction of school achievement was one of the aims of the study. For that reason the possibility that valuation modes could predict to school achievement was seen as deserving investigation and led to the conceptualization of the research problem as:

1. The detection of relationships between certain personal variables and valuation modes.

2. The detection of relationships between a number of personal variables and beliefs about education.

The formulation of these concepts required a theory of valuation in educational settings. Because schools are social systems and the values they implement are directly related to the social interaction of their members, social exchange theory was used to identify the social objects valued in educational settings. Accordingly it seemed useful to view social interaction as the exchange of three commodities: Status, Affect and Utility (Adams, 1971) These commodities, freely exchanged in systems of voluntary association, were seen as rewards, or cathectic objects, available to clients in systems of compulsory association e.g. classrooms. In addition to the three commodities of social exchange (Status, Affect, and Utility) Task, or the learning activities around which education is organized, was seen as another more globally defined concept that had the potential for attracting positive or negative valence itself.

The valuation theory employed, (Lewis, 1946) classifies values according to whether they are extrinsic or intrinsic. Extrinsic values are those whose value is outside, or extrinsic to, the valued object. Intrinsic values are those whose value is inherent to the valued object. Extrinsic values are potential, anticipatory, and instrumental. Intrinsic values are actual, immediate and terminal.

By integrating the four reward objects, Status, Affect, Utility and Task with the two valuation modes, Extrinsic and Intrinsic, it was possible to construct a matrix of cathexis which provided an eight category typology of educational values. According to the

values preferred a valuation style for each respondent could be produced.

The second component of the research model was a Belief Index Scale. The argument was advanced that culturally endorsed goals and means are cognized by all members of society regardless of SES or school achievement, and it is against this background of cultural cognitive conformity that individual differences in valuation mode are manifested. Cognizance of the instrumental value of education in four areas of goal attainment was measured by a six unit scale and produced a Belief Index score for each respondent.

The third component of the research model was composed of a variety of independent variables concerning personal characteristics of respondents. The selection of these variables was based upon empirical research concerning the relationships between SES, school achievement, parental influence, sex and curriculum content.

Salient Results

The discussion that follows is directed toward an examination of the relationships between the theoretical basis of the investigation and the actual results. First a brief summary of salient findings will be presented before their overall significance is discussed.

Valuation Mode

Parents and Pupils

The valuation mode preferred by pupil respondents was found to be definitely extrinsic in orientation. The mean extrinsic score for pupils was 9.866 out of a possible range of 1 to 16, and where a mean score of 8.000 would have indicated a balanced

position between intrinsicness and extrinsicness. Pupils' mean intrinsic score was 6.134. This can be interpreted as indicating that pupils value education primarily instrumentally, e.g. as a means of achieving future goals, rather than as an immediately satisfying experience, an end in itself.

The valuation mode preferred by parent respondents was intrinsic in orientation. The mean intrinsic score for parents was 9.246 and their mean extrinsic score was 6.754. This can be interpreted as meaning that parents tend to prefer educational aims which express values that are immediate and inherent to the educational process.

The difference in the preferred valuation modes of parents and pupils, although interesting, is not the primary concern of the study and will therefore be discussed in the final section of this chapter.

The main purpose of the research was to test the relationships between selected personal variables and the two main components of the investigation. Accordingly these relationships will be considered in the next two sections.

Belief Index and Personal Variables

Belief Index scores tended to be high with a mean greater than 19 (for both parents and pupils) out of a total possible score of 24. Contrary to the hypothesized relationship, Pupils' Belief Index scores were found to be associated with high achievement levels and with the curriculum content of the classes within the Form. This ran counter to the view initially put forward that none of the personal variables would exert a significant influence on the Belief Index of the value of education since these cognitions

were assumed to be culturally derived and universally shared. Consequently the association of high Belief Index scores with membership in the Form classes, 4L, 4G and 4S¹, and with high achievement levels was not predicted.

The results obtained from the comparison of the Belief Index scores with the personal variables seem to indicate that those factors most closely related to academic aptitude are also predictors of cognitive awareness of the value of education.

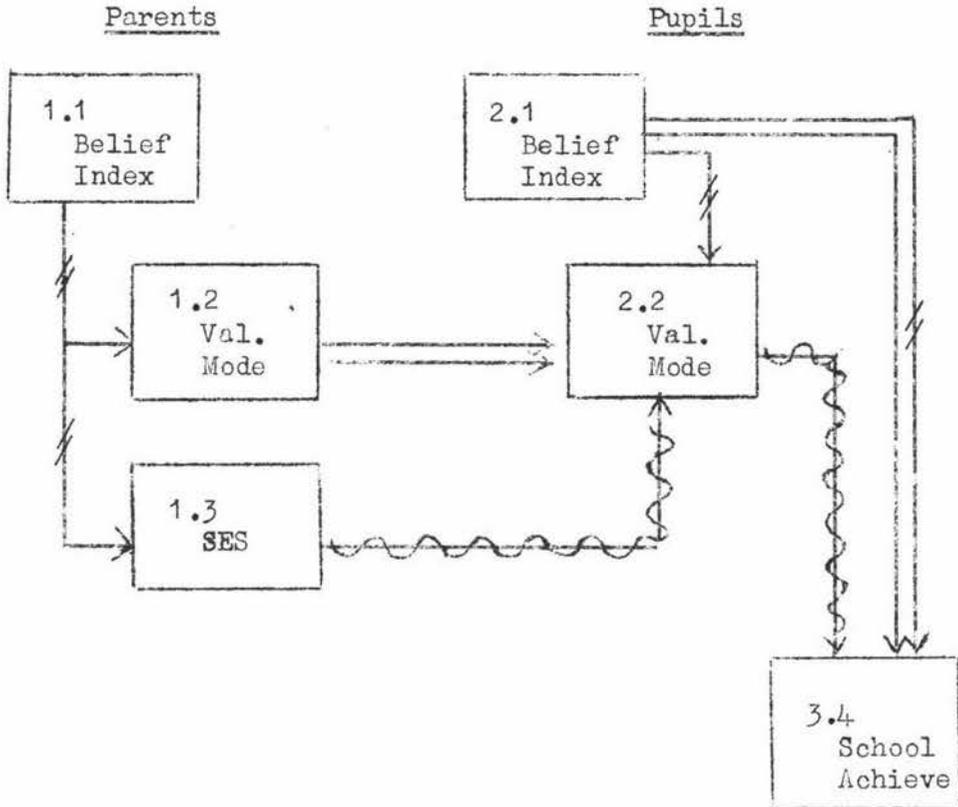
In defence of the hypothesis it may be observed that the high mean Belief Index score obtained by pupils (19.781) does indicate that the value of education for goal attainment is recognized by a clear majority of all pupils regardless of class content or of achievement level.

Intrinsic Valuation and Personal Variables

Intrinsic Valuation scores varied considerably between parents and pupils, with parents registering a greater degree of intrinsicness in their preferred valuation mode and pupils registering a greater degree of extrinsicness in their preferred valuation mode. When compared with personal variables the results showed that the valuation mode of parents has a significant association with only one other variable, pupils' class within the Form. Parents with the highest intrinsic valuation scores tended to have children enrolled in Latin, German or Science classes. For pupils, the only personal variable which was significantly associated with their intrinsic valuation scores was the intrinsic valuation scores of their parents. Figure 3 shows the relationships confirmed by the analysis of the data.

1. 4L = Latin, 4G = German, 4S = Science.

Figure 3

Hypotheses Model 'B'

- direction predicted
 ~~~~~→ relationship not confirmed  
 ==> relationship confirmed  
 //→ non-relationship predicted and confirmed  
 //→ non-relationship predicted but not confirmed

The non-relationships predicted between Parents' Belief Index (1.1) and Parents' Valuation Mode (1.2) and Parents' SES (1.3) were confirmed by the results of the research. Likewise the non-relationships predicted between Pupils' Belief Index (2.1) and Pupils' Valuation Mode (2.2) were also confirmed. That means there was no significant association between these variables.

The relationships predicted between SES (1.3) and Pupils' Valuation Mode (2.2) and between Pupils' Valuation Mode (2.2) and School Achievement (3.4) were not confirmed. There was no significant association between these variables.

The relationship predicted between Parents' Valuation Mode (1.2) and Pupils' Valuation Mode (2.2) was confirmed. There was a significant association between Parents' Valuation Mode and Pupils' Valuation Mode.

The non-relationship predicted between Pupils' Belief Index (2.1) and School Achievement (3.4) was not supported. Instead Belief Index and School Achievement were found to be significantly associated.

These results would seem to indicate that attitudes and values held by parents have a stronger influence upon children than does SES level or class membership. Those parents whose intrinsic valuation scores were higher than the average parental score had children whose intrinsic valuation scores were higher than the average pupil score for intrinsic valuation. It is interesting to note that although the pupils' valuation mode is associated to a significant degree with the valuation mode of their parents, pupils still tend to be lower in intrinsic valuation than are their parents.

When stepwise multiple regression analysis was applied to the intrinsic valuation of pupils, the sex of the parent made the next largest contribution, after the parental valuation mode. However since sex is not one of the critical variables with which this study was concerned, these results regarding the influence of sex make no contribution to either establishing or rejecting the

hypotheses.

#### Component Relationships

The previous chapter noted the rate of prediction for each of the major relationships. Regarding the first major relationship, intrinsic valuation to personal variables, the rate was not only extremely low (3 out of 15) but the predictions which occurred were not included in the hypotheses. Further detracting from the hypotheses is the fact that the predicted relationships: i) SES to Intrinsic Valuation ii) Intrinsic Valuation to Achievement were not realized in the statistical analysis.

Regarding the second major relationship, Belief Index to all other variables, it was hypothesized that no significant relationship would be manifested. However, the results indicate that Pupils' Belief Index is significantly related to class membership within the Form and to school achievement.

Explanations of these findings which are contrary to the hypotheses must take into consideration i) the character of the population sample ii) the distribution of the dependent variables among the population. iii) the discrimination power of the research instrument. Each is dealt with below.

#### Population Sample

Population characteristics were discussed in Chapter V, and Tables 1 and 3 indicate that in terms of SES and Achievement the pupils from whom the data was gathered generally represent the broad middle levels. They are neither predominantly high nor low in either SES or Achievement levels. Regarding class within the Form, these pupils as a group have a mean rank of 4.250 which is only slightly above the exact centre (4.500) on a nine point

scale. This means that somewhat more than 55% of the pupils came from the more academic kinds of classes.

As far as the sex ratio within the group is concerned, Table 4 shows that 58% of pupils were female and 42% were male. When compared with the total number of pupils tested, (224 paired pupils and 33 single pupils) the differences were insignificant between the 224 pupils in the sample and the 257 pupils of the total population tested. (See Appendix C)

#### Distribution of Variables

The research instrument attempted to measure two variables: Valuation Mode and Belief Index. A comparison of Tables 9 and 10 shows the degree to which these variables are distributed in the population tested. Valuation Mode shows a fairly normal curve for both parents and pupils with the exception of one high point at the far right of the parents' scale. The Belief Index curve, on the other hand, is definitely skewed to the right for both populations tested. The skew to the right indicates high scores were obtained by the majority of respondents in each group. This is in accordance with the hypothesis regarding the Belief Index. The fact that Belief Index has yielded curves with skewness ratios of -1.705 (pupils) and -3.031 (parents) while the Intrinsic Valuation curves register only .475 (Pupils) and -0.286<sup>1</sup> (parents) degrees of skewness, provides further evidence that Valuation Mode is a variable which may be regarded as normally distributed within the population tested. The difference between the skewness ratios for the two variables gives additional support for Hypothesis 3: The Belief Index of the value of education is not a function of

1  
 000 Skewness = perfect symmetry  
 Negative numbers = skew to right  
 Positive numbers = skew to left

either SES or Achievement.

Discrimination Power of the  
Research Instrument

On the basis of the statistical analysis of the results obtained, the instrument does not appear to be highly discriminating in the measurement of Valuation Mode. Only one of the seven independent variables proved to be significantly associated with the dependent variable. However, this could be interpreted as indicating that the choice of independent variables was not sufficiently selective.

In terms of the significant difference between the Intrinsic Valuation Mode scores of the pupil and parent populations ( $t=23.48$ ;  $df = 1$  ;  $p < .05$ ) it would seem that the instrument can discriminate between populations. Scores obtained from the total pupil population did not differ significantly from those obtained from paired pupils only. (See Appendix C) This further indicates the power of the instrument to discriminate between pupils and parents in the dimension of Valuation Mode.

In the measurement of the Belief Index, the instrument was not intended to discriminate but only to determine the degree to which respondents cognized the value of education. The fact that both Class and Achievement proved to be significantly associated with the Belief Index of pupils may be contrary to the hypothesis, but it does indicate that the measuring instrument has discriminatory power.

### Theoretical Implications

The basic theoretical assumptions underlying this study of educational values have been twofold. First there has been the assumption that education is universally recognized as having value both for the individual and for the nation. This is to assert that education is in itself a culturally accepted social value. Second, there has been the assumption that although certain values are culturally derived and universally endorsed they are also individually interpreted. These cultural values may be interpreted according to whether they are instrumentally or intrinsically rewarding to the individual. Briefly stated: Our culture provides us with certain values, but we interpret these values according to our individual value orientation.

Utilizing a functional approach, the study attempted to test the possible relationships between individual value orientations and the attainment of success goals via educational achievement. Implicit to the research design was the assumption that success goals are culturally determined and universally endorsed.

The two primary assumptions on which the study is based appear to have been validated by the research. The value of education is widely recognized and individuals interpret educational values according to varying degrees of extrinsic/intrinsickness. However, the predicted relationships between value orientations and achievement were not supported by the data obtained. In considering this lack of evidence to support the hypotheses it seems that there may be other factors operating besides those

which were considered to have primary influence.

There are few clues afforded by the results obtained from the statistical analysis. The only variable which was significantly associated with pupils' valuation mode was parents' valuation mode. Pupils with above average intrinsic valuation scores had parents with above average intrinsic valuation scores. However, in spite of this significant association there was a significant difference between the mean valuation mode scores obtained by parents and pupils. Parents were observed to be more intrinsically oriented than were their children. Neither SES, Achievement nor Class within the Form made any significant contribution to valuation mode scores. Therefore one may ask: what is it that caused the difference between the valuation modes of parents and pupils?

The only influence which all pupils share in common, but which no parents experience, is the influence of the school. Likewise the primary and universal difference between parents and pupils is one of age and experience. Parents, regardless of SES tend to be intrinsically oriented. Pupils, regardless of SES, tend to be extrinsically oriented. Two questions arise.

1. Does the school per se promote an extrinsic valuation orientation toward educational values?
2. Is adulthood the primary factor which promotes an intrinsic orientation toward educational values?

It would not be surprising if the answer to both these questions were yes.

School performs an essentially preparatory function. Its tasks tend to be instrumental to the achievement of future goals.

Children who are involved in high school education see as their immediate goal the completion of this compulsory task. It seems safe to assume that most high school pupils look forward to the end of compulsory education when they may begin to perform adult roles.

Adulthood itself, especially that stage of maturity which must accompany parenthood over the minimum duration of 14 years, is surely no longer a period of anticipation. Adults at this stage of life are probably to a considerable degree established in their communities and in their life vocations. It is quite possibly a time for the assessment and reflection which is present rather than future oriented. Consequently difference in life stages may explain the difference in value orientations between pupils and their parents. However, to simply accept this conclusion would ignore the role of the school in determining educational values. In the search for explanation it might be useful to ascertain the valuation mode of the school qua institution and of the teachers, its primary agents.

The present study indicates that mature adults tend to be intrinsic in valuation mode. If teachers and administrators were found to be similarly intrinsic in valuation mode then it would be necessary to look elsewhere for the influences which lead high school pupils to be extrinsic.

Valuation mode does not figure in the well known studies of childrens' developmental stages. Therefore it is not possible to assume that age is the primary determinant of valuation modes.

Secondary schools have traditionally played a largely

instrumental role and it is possible that pupils have consequently accepted and internalized instrumental values as appropriate educational aims. If this were true, it would be reasonable to speculate upon a configuration of differing valuation modes held by parents, administrators, pupils, teachers and the school itself. Such incongruence would raise sociological questions regarding disensus and system maintainance as well as philosophical questions regarding how appropriate educational aims should be determined.

System maintainance has been considered in terms of disensus in the role set, (Bates 1971) but not in terms of disensus in the valuation mode. It is not unreasonable to suggest that disensus in the role set may have its roots in valuation mode conflict. To assess potential conflict in valuation modes it would be necessary to monitor and code school and classroom practices according to a matrix of manifest valuation modality.

This is to suggest the possibility that an institution may implement values which are incongruent with the personal values of its agents. That is, teachers may feel constrained to inhibit personal valuation modes in order to perform what they see as a professional role.

If the valuation mode manifested by school practice could be successfully measured and compared with the professed valuation mode of teachers and administrators, any lack of congruence could be determined. Apparent disensus between the three components of an educational system, the Organization, its agents, and the pupils, would then be potentially useful in the prediction of valuation mode conflict and system maintainance.

Should parents, teachers and administrators register intrinsic valuation modes (a not unlikely possibility) and school practice prove to be extrinsically oriented, then serious philosophical considerations are raised. These concern the content of educational aims and the manner in which these aims should be determined, e.g. should educational aims be congruent with the valuation mode endorsed by parents, teachers and school administrators?

It is, of course, conceivable that tradition has endowed the secondary school with values which are independent of teachers, administrators or parents. Such a condition would provide an explanation for a potentially serious disjuncture between the values implemented by the school and those endorsed by its agents. However, such considerations lie outside the scope of the present study. It is for those concerned with the nature of organizations to provide relevant information on organizational vs individual values.

Although parents and pupils differed in Valuation Mode, the questionnaire revealed one specific area of agreement. Both parents and pupils gave highest preference to the same educational aim: "The Secondary Schools should aim to help pupils learn how to do things as well as they can". It is important to note that the lack of performance criteria included in this aim implies subjective, individualistic standards. "As well as they can" allows for a wide range of acceptable performance levels.

That schools should help pupils learn how to do things as well as they can is an aim which reflects a desire for competence which is measured primarily in terms of individual ability.

It may in fact illustrate the reality of a basic need for competence as is suggested by R.W. White (1959) in his analysis of the need for competence. The possibility that there is such a thing as a need for competence and that both parents and pupils recognize this need should be of concern to educators.

To help pupils achieve maximum, but individually determined competence levels would be contradictory to present practice in most subject areas. A system based on external examinations which must by their terms of reference fail a certain percentage of all those who attempt them, dictates that competence be determined objectively and statistically. Consequently, teachers are constrained to apply general or universal standards when judging competence, and teaching methods must inevitably reflect such attitudes. It is obvious that further research is required to ascertain the validity of the "need for competence" and the degree to which our high schools recognize and cope with its implications.

The failure of this study to support the original predictions regarding the relationships between valuation modes, SES and achievement does not detract from the potential utility of the concepts involved. Rather it has proven heuristic and has stimulated possibly fruitful consideration of ways in which the concept of value orientation could contribute to future studies of system maintainance, the validity of educational aims and the degree to which the curriculum meets basic human needs.

APPENDIX A

Questionnaire

Appendix B

A total of 257 pupils completed questionnaires, but only 224 of these pupils returned the questionnaires sent home to their parents. Consequently there were 33 pupil questionnaires which could not be paired with parental responses. Data used to test the hypotheses came only from the 224 paired parent-pupil questionnaires. However, in order to ascertain whether paired pupils differed significantly from un-paired pupils all responses were processed and the data analysed. The nature of the personal variables for the sample was discussed in Chapter V. The results of the statistical analysis performed on data from the 33 un-paired pupil responses was not included in Chapter V because it was not relevant to the hypotheses being tested.

To have ignored this data totally would have been to neglect a unique group of respondents, those pupils whose parents did not respond. Therefore tables of correlation coefficients and multiple regression analysis for the 33 un-paired pupil responses is presented and discussed here in Appendix B. Appendix C contains a table showing the mean scores attained by both groups for all the variables.

Table 22

Correlation Coefficients for Six Variables

|               | Pup.<br>Sex        | Class              | SES              | Ach.             | Int.<br>Val. | Belf.<br>Ind. |
|---------------|--------------------|--------------------|------------------|------------------|--------------|---------------|
| Pup.<br>Sex.  |                    |                    |                  |                  |              |               |
| Class         | .59 <sup>***</sup> |                    |                  |                  |              |               |
| SES           | .17                | .34 <sup>*</sup>   |                  |                  |              |               |
| Ach.          | .22                | .06                | .01              |                  |              |               |
| Int.<br>Val.  | .19                | .46 <sup>***</sup> | .33 <sup>*</sup> | .41 <sup>*</sup> |              |               |
| Belf.<br>Ind. | .03                | .15                | .02              | .15              | .25          |               |

N = 33

\* = p &lt; .05

\*\*\* = p &lt; .01

Hypotheses with which the study is concerned specify predicted relationships between Intrinsic Valuation, SES and Achievement levels. Although these relationships were not manifested by the data obtained from the paired sample, the data for single pupils reported in Table 22 appears to support these hypotheses. SES and Achievement show significant correlations with Intrinsic Valuation.

A further hypothesis with which the study is concerned specifies that no relationship exists between Belief Index scores and any other variable. The data obtained from the single pupils supports this hypothesis of non-relationship. None of the five variables show any correlation with Belief Index.

Table 23 presents the results of stepwise multiple regression analysis of the correlation coefficients obtained from the matrix of correlation.

Table 23

Multiple Regression Analysis

Dependent Variable: Intrinsic Valuation

| Ind. Vars. | Beta     | F Ratio | Sig. * |
|------------|----------|---------|--------|
| Class      | -0.45979 | 5.674   | .01    |
| Ach.       | -0.41013 | 7.485   | .01    |
| SES        | -0.22674 | 2.204   |        |
| Sex        | -0.20225 | 1.172   |        |
| Belf. Ind. | 0.12494  | 0.699   |        |

\* Only levels beyond .05 level are noted.

When the correlation coefficients were subjected to stepwise multiple regression analysis it was only Class and Achievement which made any significant contribution to variation in the dependent variable, Intrinsic Valuation.

Although SES showed a significant correlation with Intrinsic Valuation on the Correlation Matrix, when the net association with each independent variable was determined by eliminating the effects of each other factor in turn it became apparent that SES does not make a significant contribution to Intrinsic Valuation.

In summary, it appears that H.2 and H.3 are supported by the data from the un-paired pupil responses. Intrinsic Valuation contributes to School Achievement, and Belief Index is independent of all other variables.

Table 24.

Mean Scores on all Variables for  
Paired, Unpaired and Total Pupils

| Variables            | Unpaired<br>Pupils | Paired<br>Pupils | Total<br>Pupils |
|----------------------|--------------------|------------------|-----------------|
| Class Group          | 5.333              | 4.250            | 4.389           |
| SES Level            | 3.788              | 3.076            | 3.167           |
| Achievement Level    | 2.333              | 2.129            | 2.156           |
| Intrinsic Val. Score | 7.242              | 6.134            | 6.276           |
| Belief Index Score   | 19.515             | 19.789           | 19.747          |
| Number               | 33                 | 224              | 257             |
| Male                 | 51.5%              | 42%              | 43%             |
| Female               | 48.5%              | 58%              | 56%             |

It is apparent that the critical variables, SES and Achievement, reflect only slight differences between the two groups of pupils with unpaired pupils registering only slightly lower levels of SES and Achievement than the paired pupils. However, there is a marked difference between their respective membership in the Classes within the Form. Unpaired pupils tend to come from the less academic kinds of classes.

Regarding sex differences between the two groups, there is a much higher percentage of boys, and a lower percentage of girls, in the unpaired pupil group.

Finally, it is significant to note that although the unpaired pupils are somewhat lower in SES and Achievement and come from

classes where the emphasis is upon the acquisition of practical skills, their level of Intrinsic Valuation is more than one whole point higher than that of the paired pupils.

The Belief Index scores are nearly identical which is in accord with the hypothesis regarding the universality of beliefs about the value of education.

## Appendix D

Table 6<sup>1</sup>

Alphabetical list of 315 occupations rated in six levels, according to income and educational level, equally weighted.

| <u>Level Occupation</u>     | <u>Level Occupation</u>    |
|-----------------------------|----------------------------|
| 1 Accountant                | 4 Brass Finisher           |
| 2 Actor                     | 5 Brewer                   |
| 2 Administrator (n.e.c.)    | 5 Brick and Tile Maker     |
| 2 Advertising Agent         | 4 Bricklayer               |
| 5 Agent (TAB)               | 4 Builder                  |
| 4 Aircraft Mechanic         | 6 Builder's Labourer       |
| 1 Aircraft Pilot            | 4 Building Inspector       |
| 1 Analytical Chemist        | 5 Bus Driver               |
| 2 Announcer                 | 3 Buyer                    |
| 1 Architect                 | 4 Cabinet Maker            |
| 3 Armed Forces Personnel    | 5 Canning Worker           |
| 2 Artist                    | 2 Car Dealer (Proprietor)  |
| 2 Auctioneer                | 6 Caretaker                |
| 5 Baker                     | 4 Carpenter                |
| 2 Bank Manager              | 5 Carpet Layer             |
| 3 Bank Teller               | 5 Carpet Maker             |
| 5 Barber                    | 5 Carrier                  |
| 5 Barman                    | 3 Cashier                  |
| 2 Beekeeper                 | 2 Caterer                  |
| 5 Blacksmith                | 6 Chainman                 |
| 2 Boarding House Proprietor | 5 Chauffeur                |
| 4 Boat Builder              | 4 Chemical Worker (n.e.c.) |
| 4 Boilermaker               | 2 Chiropractor             |
| 4 Book Binder               | 6 Cleaner (n.e.c.)         |
| 3 Bookkeeper                | 2 Clergyman                |
| 6 Bootmaker                 | 3 Clerk                    |
| 6 Boot Repairer             | 5 Clothing Worker          |
| 6 Bottler                   | 4 Coach Builder            |

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Level Occupation

6 Coal Miner  
 2 Commercial Artist  
 3 Commercial Traveller  
 2 Company Director  
 2 Company Manager  
 2 Company Proprietor  
 3 Company Secretary  
 4 Compositor  
 4 Concrete Construction Worker  
 5 Concrete Block and Pipe Maker  
 5 Cook  
 4 Cooper  
 2 Copywriter  
 5 Crane Operator  
 6 Custodian  
 2 Customs Agent  
 4 Cycle Repairman  
 5 Dairy Factory Worker  
 6 Dairyman  
 2 Deck Officer  
 5 Delivery Man  
 4 Dental Technician  
 1 Dentist  
 4 Die Maker  
 1 Doctor  
 4 Drainlayer  
 3 Draughtsman  
 5 Driver (Excavating Equipment)  
 5 Driver (Stationary Engine)  
 5 Driver (n.e.c.)  
 5 Drycleaner  
 5 Dyer  
 1 Economist  
 2 Editor  
 4 Electrician  
 4 Electronic Worker  
 4 Electroplater

Level Occupation

1 Engineer (Professional)  
 5 Engine Oiler and Greaser  
 3 Export Agent  
 6 Farm Contractor  
 2 Farmer  
 6 Farm Labourer  
 2 Farm Manager  
 6 Fencer  
 4 Fertilizer Worker  
 2 Film Producer  
 3 Fireman  
 4 Fisherman  
 4 Fitter  
 6 Forestry Worker  
 5 Foundry Worker  
 5 Fork Lift Operator  
 5 Freezing Worker  
 4 French Polisher  
 6 Ganger  
 4 Garage Attendant  
 2 Garage Proprietor  
 6 Gardener  
 4 Gas Worker  
 4 Glazier  
 4 Goods Supervisor  
 1 Government Administrator  
 5 Grader Operator  
 5 Groom  
 6 Groundsman  
 3 Guard  
 2 Health Inspector  
 5 Hospital Orderly  
 5 Hotel Porter  
 2 Hotel Proprietor  
 6 Hunter  
 3 Import Agent  
 4 Inspector (Transport)

Level Occupation

4 Instrument Maker  
 2 Insurance Agent  
 2 Insurance Assessor  
 2 Interior Decorator  
 5 Iron and Steel Worker  
 6 Janitor  
 4 Jeweller  
 4 Joiner  
 5 Jockey  
 2 Journalist  
 5 Kitchenman  
 3 Laboratory Technician  
 6 Labourer (n.e.c.)  
 2 Landscape Gardener  
 5 Laundryman  
 1 Lawyer  
 6 Leather Worker (n.e.c.)  
 1 Librarian  
 5 Lift Operator  
 6 Logger  
 4 Machine Operator  
 5 Mail Contractor  
 5 Mail Sorter  
 3 Male Nurse  
 3 Manufacturer's Agent  
 4 Manufacturing Jeweller  
 2 Marine Engineer  
 2 Market Gardener  
 6 Market Garden Worker  
 5 Meat Inspector  
 4 Mechanic (n.e.c.)  
 4 Mechanical Engineer (Non-  
 Professional)  
 1 Member of Parliament  
 2 Merchant Proprietor  
 5 Messenger  
 4 Metal Worker (n.e.c.)  
 3 Meter Reader  
 6 Milker

Level Occupation

5 Milkman  
 5 Miller  
 5 Miner (n.e.c.)  
 6 Mineral Treater  
 4 Motor Assembler  
 4 Motor Body Builder  
 4 Motor Mechanic  
 5 Moulder  
 2 Music Teacher  
 2 Musician  
 4 Newsagent  
 2 Nurseryman  
 6 Office Cleaner  
 3 Office Machinist  
 2 Orchardist  
 6 Orchard Worker  
 2 Optician  
 2 Optometrist  
 6 Packer  
 5 Painter  
 4 Paint Maker  
 4 Panel Beater  
 4 Paper Mill Worker  
 5 Paperhanger  
 5 Park Caretaker  
 5 Pastrycook  
 1 Personnel Officer  
 4 Plasterer  
 4 Platelayer  
 4 Plumber  
 2 Pharmacist  
 3 Photographer  
 2 Physiotherapist  
 5 Plastics Worker  
 3 Policeman  
 6 Porter  
 5 Postman  
 3 Postmaster

Level Occupation

5 Potter  
 5 Presser (Clothing)  
 4 Printer  
 4 Printing Machinist  
 5 Production Process Worker  
 1 Professional (n.e.c.)  
 4 Projectionist  
 3 Proof Reader  
 1 Psychiatrist  
 1 Psychologist  
 1 Public Relations Officer  
 6 Quarryman  
 6 Rabbiter  
 4 Radio and TV Station Operator  
 4 Radio and TV Serviceman  
 2 Radiographer  
 5 Railway Brakeman  
 4 Railway Engine Driver  
 4 Railway Fireman  
 5 Railway Guard  
 4 Railway Signalman  
 6 Railway Surfaceman  
 6 Railway Worker (n.e.c.)  
 2 Real Estate Salesman  
 4 Refrigeration Engineer  
 2 Reporter  
 2 Restaurant Proprietor  
 4 Rigger  
 6 Roadman  
 4 Roofing Worker  
 5 Rubber Worker  
 6 Rubbish Collector  
 6 Saddler  
 4 Salesman  
 4 Saw Doctor  
 4 Sawmill Worker  
 4 Scaffolding Erector  
 1 School Inspector

Level Occupation

1 School Teacher  
 1 Scientist  
 6 Scrub Cutter  
 5 Seaman  
 3 Secretary  
 4 Service Station Worker (n.e.c.)  
 5 Service Worker (n.e.c.)  
 6 Shearer  
 6 Shearing Shed Hand  
 6 Shepherd  
 2 Ship's Pilot  
 4 Shipwright  
 4 Shop Assistant  
 2 Shop Owner  
 5 Signwriter  
 1 Social Welfare Worker  
 5 Spinner  
 5 Sports Coach  
 4 Stationmaster  
 2 Stock and Share Broker  
 2 Stock and Station Agent  
 6 Stockman  
 6 Street Cleaner  
 5 Steward  
 5 Stocker (not Railway)  
 5 Sub-Station Operator  
 4 Sugar Refinery Worker  
 1 Surveyor  
 5 Tailor  
 5 Taxi Driver  
 3 Technician (n.e.c.)  
 4 Telecommunications Worker (n.e.c.)  
 4 Telegraph Linesman  
 4 Telephone Exchange Operator  
 5 Textile Worker  
 4 Timber Treatment Worker  
 5 Tobacco Factory Worker  
 4 Toolmaker

Level Occupation

2 Theatre Manager  
 1 Town Clerk  
 14 Town Planner  
 6 Tractor Driver  
 3 Trade Union Secretary  
 4 Traffic Controller (n.e.c.)  
 5 Trainer (Racehorse)  
 5 Truck Driver  
 6 Tunneller  
 4 Turner  
 1 University Teacher  
 4 Undertaker  
 5 Upholsterer  
 2 Valuer  
 1 Veterinarian  
 5 Waiter  
 3 Warder  
 2 Warehouse Agent

Level Occupation

5 Warehouseman (Freight)  
 5 Waterside Worker  
 4 Watchmaker  
 5 Weaver  
 4 Welder  
 4 Well Driller  
 5 Winchman  
 4 Wire Worker  
 4 Wood Pulp Worker  
 4 Woodworker (n.e.c.)  
 5 Wool Classer  
 5 Wool Machinist  
 5 Wool Scourer  
 2 Working Proprietor  
 2 Writer

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