

An Investigation into the Relationship between Home
background and Scholastic Achievement of a Group of
Junior Secondary School Pupils in Zambia.

by
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that this dissertation represents my own work and that
it has not previously been submitted for a degree at
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ABSTRACT

This research investigated the home background of 200 Zambia Junior Secondary School pupils, fifteen to nineteen years old, equally divided between high and low-achievers (i.e. between pupils with division I or II and division III or IV) and matched for ability and sex.

The basic rationale for this study arose out of the realization that few studies relating to the effect of home background on pupils' scholastic achievement have been conducted in Africa. It was felt that though researchers in the West unanimously agree that home background variables have a bearing on scholastic achievement, the cultural differences between the West and Africa and the contradictory nature of results from a limited number of African studies cannot warrant application of these findings to all parts of Africa. Therefore, before generalizations are made, it was felt necessary that similar studies be conducted in as many parts of Africa as possible.

The study was also prompted by the unimpressive results at the Junior Secondary School level. These poor results viewed in the context of: a threat to social, political and economic stability due to unemployment; shortage of middle-level skilled educated manpower; and the large investments made in secondary education in a period of increasing financial stringency, formed the

other rationale for this study. It was assumed that since students do very well at Grade VII level in order to qualify for secondary school but do poorly later, factors operating outside the classroom and particularly at home may be of greater importance at secondary school level. While transmission of skills and knowledge is extremely important at primary school level, at secondary school a pupil has not only to supplement what happens in the classroom by his private study at home but also needs constant encouragement and support from parents.

The main objective of the study was to determine whether there were significant variations on home background variables between pupils of comparable intellectual ability but differing scholastic achievement. In this way, it was hoped to identify the forces that make or mar educational promise at the Junior Secondary School level.

It was hypothesized that high-achievers would gain significantly higher mean scores than low-achievers on scales designed to measure each of the following variables: parental education; reading habits in the home; parental income; parental occupation; housing conditions; overcrowding; family-size; birth-order; parental attitudes towards education, school and teachers; parental encouragement and support afforded the pupil at home; and the emotional satisfaction enjoyed by the pupil at home.

The data obtained were subjected to the A-test statistical analysis (this test yields the same results as the t-test since the statistical formula has been derived from the t-ratio) in order to determine whether the differences between the two groups were statistically significant.

The study found statistically significant differences between high-and low-achievers on all, except two variables (family-size and birth-order). This meant that of the eleven variables investigated, nine were potent factors in the scholastic achievement of secondary school children.

The study recommended the following measures to counteract the effect of impoverished home environment: social reform (as a long-term measure); compensatory education; guidance and counselling; closer relationships between the home and the school; identification of deprived pupils by the beginning of secondary education; and regular physical examinations among secondary school pupils (as short-term measures).

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CHAPTER ONE

THE RESEARCH PROBLEM AND REVIEW OF THE PERTINENT LITERATURE

Introduction

Environmental factors are of great importance in education because they exert considerable influence on pupils' scholastic achievement. Much that is done in the classroom during the working day may be undone during the time when the pupil is away from school. In other words, environmental circumstances may predispose children to failure because learning in school is directly and indirectly influenced by factors outside the classroom. For example, problems of learning may lie in the child's personal problems at home. Schools and homes can then be thought of as complementary to each other in the sense that what takes place outside the classroom continually influences what goes on inside and vice versa.

A pupil's home is therefore a foundation to school life. His character or behaviour can be traced from the way he was brought up in his family. The kind of home in which a pupil grows up affects both the values he holds concerning how he should behave in general and also the way he actually does behave in school.

Potentialities for learning may be developed to the full or may remain stunted according to the nature of the environment in which the child develops. An environment which is antagonistic towards the pupil retards his scholastic ability. According to one report, the quality and nature of the general environment may account for at least more than 20 per cent of the variance in scholastic achievement (Wall, Shonell and Willard, 1962:62). Studies of Mill children in North Carolina and Canal boat children in England have also demonstrated that an impoverished home environment leads to a progressive deterioration in scholastic achievement (Douglas, 1964:31). Campbell (1952:98); Wiseman (1964:36); and Wall, Shonell and Willard (1962:62), have found that intelligent children who find themselves in an impoverished environment are likely to do poorly in school. Fraser (1968:45-65), in her study of Aberdeen school children also found results which showed that the home environment is associated with scholastic achievement.

This section asserts that pupils who fail are probably held back by environmental factors from reaching the level of educational achievement of which they are capable. The experiences of these pupils in their homes, their motivation for learning and their goals for the future are such as to handicap them in school work, i.e. their homes do not transmit the skills and values necessary for the type of learning characteristic of the schools. The next section will discuss the significance of this study.

The Significance of the Study

It is important to investigate a pupil's home background because learning whether at home or school takes place through the environment. This gives the teacher a framework within which he has to operate if his children are to learn effectively. Therefore, a knowledge of pupils' home backgrounds assumes greater importance in curriculum development and planning. It is not possible to select and organize meaningful, relevant and appropriate material and teaching methods without the knowledge of what and how much the pupils already know from their early experiences in their homes.

Primary experience is a starting point for all learning and a prerequisite for learning new ideas. It follows, therefore, that in preparing teaching materials and lessons, pupils experiences must be considered as starting points. It is the duty of the teacher to determine both the nature of these prerequisites and the moment when individuals have reached given stages and are ready for new learning. In so doing, the teacher will reveal strengths on which to build and deficiencies to be rectified. A study of pupils' home backgrounds affords such an opportunity. Opolot (1971:22), has for example contended that "...to be effective in the classroom a teacher needs to know a great deal more than subject matter alone. He must understand the individuals he is teaching, their abilities, the stages of development



through which they pass and the different ways that environment moulds their personalities and interests. In short, the teacher needs to understand the principles underlying the behaviour of his pupil".

The importance of this study can also be seen in the light of the unimpressive Junior Secondary School Leaving Examination results. A review of these results from 1964 to 1973 shows that all is not well.¹ These examination results are used for both certification and selection to senior secondary school. Performance at junior secondary school level becomes crucial when considered against the background of manpower requirements and an educational ladder to senior secondary and subsequently to tertiary institutions. Secondary schools are the major source of educated middle-level manpower. However, with poor performance, it is unlikely that the much needed self-sufficiency in educated manpower could be reached. Selection to jobs or training institutions is done on merit. A Form III failure does not therefore stand a good chance of securing a job or entry to training institutions.

The problem of failure at the junior secondary school level is indeed a serious one. The great numbers of these unemployed youth flooding the streets raise a threat to social, political and economic stability. The shortage of

1. For Junior Secondary School Leaving Examination results, refer to Appendix V. See also Appendix VI for attrition rates at the Secondary school level.

middle-level skilled educated manpower has to be compensated for by recruitment of expatriates. This implies an obvious drain on foreign reserves. Zambia must ensure that the large investments in secondary education (despite the ailing economy) is not put to waste but is effectively and efficiently utilized. This can be done by reducing failure percentage in junior secondary schools - a process warranting investigations into factors which predispose pupils to failure.

The significance of this study is twofold. Firstly, a study of pupils' home backgrounds is important because the preparation of teaching materials and experiences depends on how much the teacher knows about his pupils. Secondly, since failure at junior secondary school level poses serious social, economic and political problems, it has to be checked. This can be done by conducting investigations into its causes - a study of pupils' home environments is one way of seeking solutions to this problem. The next section will review the research and literature pertaining to the relationship between home environment and scholastic achievement.

Review of Related Research and Literature

Numerous studies have been conducted in the Western world to investigate the relationship between home environment and pupils' scholastic achievement. Whereas some of these studies have used social class as a generic variable of the home environment, others have concentrated on individual

variables such as education, occupation, income, etc. (Social class and home environment are closely related because the former reflects the way of life of a particular family. The factors considered under social class such as parental education, occupation, income, etc. are also components of the home background to which a pupil belongs). The numerous studies conducted to investigate the relationship between social class and scholastic achievement have found that there is a close and significant relationship between the two. It has been found that children from high social class outperform children from low social class in scholastic achievement even at the same levels of ability.¹

Nevertheless, social class, as far as the problem of scholastic achievement is concerned is a crude variable of limited direct importance (Miller, 1970:268; Sugarman, 1970:287; and Munro, 1962:23). It is a crude categorization in the sense that it involves a group of individuals in society who feel that they belong and are equal to each other depending on a variety of qualities, e.g. mode of living, behaviour form, material possessions, type of

1. The following studies lend support to the findings that pupils from high social-status families do better than pupils from low social-status families in scholastic achievement: Chauncey (1929) reported by Wiseman (1964); Coleman (1940); Shaw (1943) reported by Wiseman (1964); Campbell (1952); Lewis (1952); Kemp (1955); Fitt (1956); Floud et al. (1956); Coster (1958); Fraser (1968); Lynn (1959); Pigeon (1959); Wall, Shonell and Willard (1962); Hill and Giammatteo (1963); Wiseman (1964); Douglas (1964); Greenberg et al. (1965); Swift (1966); Sharrock (1968); Miller (1970); and Dale and Griffiths (1970).

occupation, amount and kind of education, etc. But within this broad group, the differences may be significant. Social class is of limited importance in the sense that the various factors included in the concept are not likely to have equal influence on scholastic achievement. Such factors may act independently in producing chances in scholastic achievement. In addition, defective home backgrounds are not the sole prerogative of any one social class. Children in generally privileged homes can be held back in their educational achievement by the existence of adverse environmental factors which are not necessarily material or economic. On the other hand, children from impoverished home backgrounds may succeed in overcoming their handicaps and do well in their school work. In fact, it can be argued that it is what the parents do in the home rather than their status characteristics which are most influential on the achievement of children.

Apparently it is more useful to consider the subvariables separately. This being the case, the present study reviewed and investigated the relationship between individual subvariables and scholastic achievement. These were considered under four groups:

Cultural Factors

1) Parental education:

Parental educational background has a bearing on pupils' scholastic performance. Limited educational experience of the parents is a handicap to pupils' school progress. Therefore, children of well-educated parents

are likely to surpass children of the less educated in school work. Bhatnagar (1952:78-79); Griffiths (1958:169); Bledsoe (1959:3-6); Evans (1962:205-206); Swift (1965:17); Fraser (1968:65); and Morton-Williams (1970:162), have found a **positive** and significant correlation between parental education and success at school. Dale and Griffiths (1970:75), have also confirmed this finding. In an examination of the parental education of deteriorators in England, they found that in only one case amongst the thirty-nine families was there a parent educated in a secondary school, whereas in the control sample there were 108 out of 181 families with one or more parents who were taught at a secondary school.

2) Reading Habits in the Home:

This depends largely on the availability of books and other printed materials and the interest the parents and children have in reading. The availability of books in the home, the literacy level of family members and the emphasis on reading are significant factors in a pupil's scholastic achievement. If parents have firm habits of reading, their children will be more likely to develop similar interests. Therefore, it is of help if children come from a home which is used to reading and consulting books for information and entertainment. Reissman (1962:5), and Burgess (1973:180), have asserted that lack of an educational tradition, e.g. having few books, is a factor closely related to failure in school. Fraser (1968:45), found the variable of parental

reading habits as a factor which is significantly associated with school performance.

Material (Economic) Factors

1) Parental Income:

The economic condition of the home is of importance because it is associated with the parents ability to fend for their families. Parents in low-income brackets are unable to provide the material and physiological needs, and the cultural stimulation that wealthier parents can provide. Material poverty, resulting from inadequate incomes, can result in the pupils' poor health and limited general knowledge- all of which result in poor school work. In addition, apart from providing food, clothing and other things necessary for the maintenance of bodily health, money can also provide objects, e.g. toys, books and other household goods which can help widen the experiences of the child and his ability to deal with new situations. Therefore, income at a low level acts as a direct impediment to a child's educational chances (even where parents are favourably disposed), whereas at a high level it makes it possible for parents to implement their interest in children's education.

Several studies conducted to investigate the relationship between parental income and scholastic achievement have found a close and significant association between the two. Bhatnagar (1952:79), in an examination of school failure among intelligent Indian pupils found 65.5 per cent of students from the unsuccessful group to be economically

handicapped. Floud, et al. (1956:32), in an examination of the social factors associated with selection to and success at secondary schools in England found that selection and success of children varied according to material difference even at the same social level. Coster (1959:59), in his study of some characteristics of high school pupils from three income groups in England found that scholastic success varied markedly among the three groups with more failures belonging to the low income group. Evans (1962:205), in a study conducted in South Wales found a strong relationship between material environment and length of grammar school life with premature and early leavers coming from poor material environments and sixth form entrants coming from rich material environments. Fraser's (1968:47), Aberdeen study also found that the economic factor correlates significantly with school performance even when intelligence level has been controlled. Burt (1961:133); Bloom, Davis and Hess (1965:30); Swift (1965:11); Dale and Griffiths (1970:81); Kelsall and Kelsall (1971:40); and Roy (1976:59-60), also subscribe to the fact that the financial factor is responsible for poor scholastic achievement.

2) Parental occupation:

Parental occupation is of importance in the educational achievement of pupils because it affects the opportunities children have for observing adult activities and copying skills. It also limits the amount of time and energy available for parent-child interaction. Skills which prepare children for

school can be developed adequately if there is effective parent child interaction, e.g. children with professional parents who discuss their work and out-of-work experiences are likely to imitate their parents and benefit from the skill and values acquired in this way. On the other hand, manual labourers are usually too tired after work and have little time to interact with their children.

Many researchers have found that there is a strong relationship between parental occupation and pupils' scholastic achievement. It has been found that children with parents in high-status non-manual occupations do better in school than children with parents in low-status manual occupations. Floud (1970:45), and Dale and Griffiths (1970:73), have found that deteriorators come from semi-skilled and unskilled workers homes whereas improvers come from professional and managerial homes. Davis (1948:41); Collins (1954:13); Griffiths (1958:169); Bledsoe (1959:3-6); Derrick (1962:305-307); Evans (1962:205); Douglas (1964:37); Swift (1965:15); Fraser (1968:65); Miller (1970:262-9); and Roy (1976:59-60), have all confirmed this finding.

3) Housing conditions:

This variable is closely associated with the economic position of the parents. Parents who are well off can afford to provide better housing and facilities for their families whereas poor parents in most cases fail to do so. Poverty

and poor housing go hand in hand and tend to have adverse effects with obvious educational consequences. Bad living conditions are associated with poor educational attainment because these sap children's vitality and concentration on their school work.

The performance of children in school achievement tests is greatly influenced by the conditions obtaining in their homes. Conditions at home, e.g. lack of household goods and amenities have a depressive influence on scholastic achievement. Douglas (1964:119), in a study conducted in England found that children from good homes improve their test performance between eight and eleven whereas those from poor homes deteriorate. Wall, Shonell and Willard (1962:65), and Evans (1962:205), have also found that the standard of housing correlates with poor scholastic achievement.

4) Over-crowding:

Secondary school work requires that a pupil does home work after school hours. Therefore, where children are attending secondary school, there is need at home for a quiet corner of their own for study. Over-crowded homes are a strain on both parents and children. In over-crowded homes, children are deprived of quiet and privacy. Griffiths (1958:169), in a study conducted in England found that a home which cannot provide facilities for quiet study in comfort is an unfortunate one for secondary school pupils, whereas one which does is an asset as found in the case of improvers.

There are also health and related hazards associated with over-crowding which could adversely affect a child's educational prospects, e.g. when children share beds, they may sleep badly, and through tiredness be unable to concentrate on their work at school. Children also need space for physical games and exercise. Lack of space may adversely affect a child's development. Evans (1962:205), in his South Wales study found successful students among families with a low density of persons per room in their homes. Hill and Giammatteo (1963:269); Douglas (1964:33-35); and Floud (1970:39), have found that over-crowding is negatively correlated with scholastic achievement.

5) Family-size:

The presence of a large number of siblings is an adverse element as far as scholastic achievement is concerned. Large families and poverty always tend to go side by side. The bringing up of a large family on an inadequate income puts ~~severe~~ strains on adults and children alike. There is also the question of parent-child interaction. In large families, there is a possibility that some members of the family will not have adequate contact with their parents because there are a lot of children competing for attention.

A great deal of research has shown that the size of a child's family is closely associated with his scholastic achievement. It has been found that children from large families do poorly in school attainment tests than children from small families. Musgrove (1966:73), has reported Himmelweit as having found that working-class boys from small families (one or two children) have a better chance of gaining grammar school places than working-class boys from large families. Musgrove (1966:73), has again reported negative correlations between educational attainment and family-size in the Scottish Mental Survey of 1942. Douglas (1964:92), in a research on a national sample of primary schools in England found that children were less likely to succeed in the eleven plus selection tests if they came from large families. Fraser (1968:53), in her Aberdeen study found negative correlations between family-size and scholastic achievement. Floud, et al. (1956:32); Burt (1961:105); Evans (1962:205); Swift (1965:13); Dale and Griffiths (1970:77); and Miller (1970:268), have all found that low-achievers come from bigger families, whereas high-achievers come from smaller ones.

6) Birth-order:

The importance of birth-order as a factor in the scholastic achievement of pupils lies in the fact that a child's experiences are influenced by his ordinal position in the family, i.e. by whether he is an only child, eldest, youngest or intermediate. Lynn (1959:54); and Musgrove (1966:74),

have reported researches which show that eldest, youngest and only children are better achievers than intermediate children. Musgrove (1966:74), for example, has reported Halsey and Gardner (1953) as having found that a working-class boy, whatever the size of his family, is more likely to attend a grammar school if he is an eldest child. Less and Stewart (1957), have also been reported by Musgrove (1966:75) as having established that both eldest and only children are found in grammar schools significantly more often than in modern schools. Since entry to grammar schools is competitive, it is in order to suggest that both eldest and only children do better than intermediates in their selection examinations. Douglas (1964:96), also found eldest children both in middle and working-class families better achievers than intermediates.

The only, eldest or youngest children have an advantage in that they get a lot of stimulation from their parents by virtue of their close contact with parents. In addition, it is easier to fend for one child than it is to fend for many.

Motivational Factors

1) Parental Attitudes towards education, school and teachers:

Attitudes are fundamental in education because success at school depends on the attitudes the pupil has towards school. A person with favourable attitudes towards an activity is one who may easily be motivated to embark on such an activity. Negative feelings about school and school work

severely handicap school performance. Lewis (1952:218); Brodie (1964:375); Wisenthal (1965:79); and Morrow and Wilson (1965:508), have found that favourable attitudes towards school and teachers positively correlate with scholastic achievement.

A pupil's attitude may be a function of his parents' attitudes. The child's image of the school may be acquired from his parents and as such his behaviour at school is likely to reflect the attitudes already acquired by his parents. Depending upon the nature of such attitudes, positive or negative, the child's goals and values will be influenced and determined. Parents whose views of education are sympathetic (i.e. those who believe in education and support the school and its efforts), and who see education as an important ladder for social mobility tend to have children who are successful in school. Roy (1976:57), has reported studies which have confirmed the relationship between parental attitudes and scholastic achievement of children at both primary and secondary schools. Fitt (1956:30); and Roy (1976:58), have all found that parents' attitudes towards education affect pupils' scholastic achievement.

2) Parental Encouragement and Support afforded the pupil:

Parental interest in pupils' school work is of importance because the interest of the children in their school work is deeply affected by the degree of interest their parents show in their work. A child's capacity to do well in his work at school is to a certain degree dependent on

the encouragement and support he gets from his parents. This has a bearing on pupils' academic motivation - the drive to persevere and excel. Motivation enhances learning. The more strongly motivated a child is the more progress he will make at school. Entwistle (1968:181), has found academic motivation as a factor which correlates more closely with school attainment.

The amount of parental interest in a pupil's learning and the amount of practice and encouragement the child is given in general learning are significant influences on the development of a child's interest and motivation in learning. Parents who lack ambition for the child and are indifferent towards the child's school work and progress tend to have unsuccessful children in school. Kelsall and Kelsall (1971:78-81), in their review of literature have shown that there is a great deal of evidence supporting the view that the degree and nature of parental involvement with children's education has a strong bearing on their educational achievement and aspirations. Wall, Shonell and Willard (1962:68), and Douglas (1964:59), have found that children do better at school if their parents are interested in their school progress. Children whose parents were rated as very interested improved their test-score whereas those whose parents were rated as uninterested showed a deterioration in score. McGeeney (1968:87-106), studied parental attitudes of working-class families in England and found that children whose parents had managed to give effective educational

encouragement did better than those whose parents gave less encouragement. Bhatnagar (1952:78-9); Griffiths (1958:169); Fraser (1968:75); and Miller (1970:264-7), have found that lack of parental backing, encouragement and poor motivation have adverse effects on the scholastic achievement of pupils.

Emotional Factors

2

1) Emotional satisfaction enjoyed by the child at home:

Emotional problems arising from the general climate of a child's home are of great importance because they may affect the scholastic achievement of a pupil. Therefore, it is important to know whether there is adequate security and love in the home, whether the child is reared in an atmosphere of relative calm and understanding, or whether he is the centre of tensions because these affect the child's ability to apply himself in class. Children who are beset with emotional problems cannot learn easily because they are unable to turn their energies in the direction of learning. Emotional problems may cause a deflection of energy from class-room work and lead to failure. The affectionless child, the child whose basic psychological needs for safety and love have not been met, for example, is unlikely to be able to concentrate on his less basic needs such as schooling. Without a feeling of security and acceptance, the most powerful incentive to maximum learning will be absent. Wall, Shonell and Willard (1962:9), for example assert: "...such children seem to be seeking for the love which they lack and to be bending their energies

either to an aggressive search for security and affection or to have turned them inwards upon themselves and a world of fantasy ... such children fail because they are blocked by more urgent unsatisfied needs."

Numerous studies conducted in this field show that emotional problems produce psychological turmoil in children and that this in turn greatly affects their scholastic achievement. Bhatnagar (1952:79), found emotional maladjustment at home as a contributory factor to school failure. Lewis (1952:218), in a study conducted in England found significant differences between successful and unsuccessful pupils in ratings for emotional stability and adjustment. Wall, Shonell and Willard (1962:69), have reported Robertson as having found that the improvement or deterioration in secondary school work was related to factors in the emotional life of the pupil. Douglas (1964:67), has found that children who show few symptoms of emotional instability pursue their studies with great vigour and concentration and thereby do better in school attainment tests. Fraser (1968:18), has reported Shonell as having found that the greater amount of scholastic backwardness among intelligent pupils is associated with unfortunate emotional experiences. Evans (1962:205-6); Swift (1966:83); Fraser (1968: 65); and Miller (1970:264-7), all subscribe to this finding.

So far, the review concentrated on studies and researches done outside Africa. The following section gives a picture of the situation obtaining in Africa as far as the relationship between home background and scholastic achievement is concerned.

Review of African Literature

Turning to Africa, there is a limited amount of work done in this field. Silvey (1972:78), in his East African research found a relationship between parental occupation and scholastic achievement of pupils. Bakare (1972:355-363), has reported a significant difference in performance of Upper-class and ~~Lower~~-class Nigerian children on the 'Draw-a-man' intelligence test. Wallace (1974:29), in her review of literature has reported Foster and Brownstein as having found that the background variables of father's education and occupation are factors affecting the educational chances of the children. Wallace (1974:33), in her own study conducted in rural Buganda found that the education of both parents, father's occupation and landowning status are important factors affecting the educational chances of the child.

However, Heyneman (1976:43), has summarized deviant findings as reported by Currie, Murphee, and Alexander and Simmons. Currie investigated the relationship between parental socio-economic status and the performance of Ugandan secondary school students in 1954, 1959 and 1964 -- no relationship was found between socio-economic status and scholastic achievement in all studies.

Murphee in a research conducted in Rhodesia found that children from illiterate homes performed better than children from privileged home. Alexander and Simmons found low or random correlations between socio-economic status and scholastic achievement (suggesting that, as far as African children are concerned, the variable of socio-economic status may not be a significant factor in scholastic achievement). Silvey (1972:371-8), in his investigation of educability in East Africa found no relationship between parental education and scholastic achievement. Heyneman in his own investigation of the same issue among primary school children in Uganda found no relationship between measures of a child's socio-economic background and his academic achievement: "The fact that a child comes from a privileged background in which his parents have received more formal education or in which his father has a ... more secure income, or in which his home contains a great number of modern possessions, does not necessarily mean that a child will score better on a test of academic achievement" (1976:45). In another investigation conducted among 400 Form I pupils in certain secondary schools in Freetown, Dunstan (1961:119), found "... no evidence of systematic variation of ability in test performance with occupational status of the parents of the children tested".

It is discernible from the review of related research and literature that the numerous studies conducted in the West point to the fact that the home background variables reviewed play a cardinal role in the scholastic achievement of pupils. However, the limited studies conducted in Africa present contradictory findings.

Purpose of the study

Although researchers in the West unanimously agree that the home background variables reviewed have a bearing on the scholastic achievement of pupils, the cultural differences between the West and Africa and the contradictory nature of results from a limited number of African studies are a reminder that caution is needed when dealing with these issues in Africa. Given these reasons, it would be premature and inappropriate to generalize and apply these findings to all parts of Africa. It is important, therefore, that before categorical statements are made with regard to the home background issue, similar studies be carried out in as many parts of Africa as possible to authenticate the influence of the home background variables on the scholastic achievement of African children.

The purpose of this study was to:

- 1) Investigate aspects of the home backgrounds of Zambian pupils who obtained division I or II and division III or IV in the Junior Secondary School Leaving Examinations (J.S.S.L.E.) held in 1978.

2) Determine whether there are significant variations in the home background variables (between the two groups) associated with differences in scholastic achievement at junior secondary school level.

Although an investigation pertaining to the effect of the home environment on scholastic achievement has not been undertaken in Zambia, Munro's (1968:27), survey of pre-school children's environments in a Lusaka suburb gives the impression of the presence of these negative environmental influences. This study has a wider scope than the other African studies reviewed in the sense that it investigates eleven home background variables as opposed to less than three investigated by others.

Statement of Hypothesis

Going by the studies and researches done in the West and reviewed in this study, it was hypothesized that: high-achieving (division I and II) pupils would obtain on the average significantly higher mean scores on items designed to measure each of the eleven variables investigated in this study than low-achieving (division III and IV) pupils.

Definition of Terms as used in the Study

Birth-order: The ordinal position of a pupil in the family.

Cultural environment: Refers to the state of intellectual development in a family designated by parental formal education and reading habits of family members.

Eldest child: Firstborn child.

Emotional adjustment: The process by which one becomes able to cope with emotions in relation to one's psychological and mental make-up.

Emotional anxiety: A reaction of apprehension, tension or uneasiness characterized by fear, dread, or uncertainty about the future.

Emotional instability: A condition characterized by unnatural fluctuations of mood, ranging from animation to sadness or despondency.

Emotional stability: The ability to control the emotions; lack of extreme or unusual variations in normal emotional characteristics and patterns of response - involves a satisfactory personal and social adjustment.

Family-size: The number of people living in the same house and sharing the same kitchen.

High-achieving pupils: Pupils who obtained either division I or II in the Junior Secondary School Leaving Examination. Also referred to as Group 1.

Home background: This term is used interchangeably with home environment to designate the cultural, material (economic), motivational and emotional aspects of a pupil's family.

Housing conditions: This term designates the availability or non availability of amenities, e.g. running water, electricity, the number of assets in the home and also the type of residential area (low, medium, high density or shanty compound).

Intelligence: In this context intelligence is defined as a degree of ability represented by performance on a verbal reasoning intelligence test. This test was selected because it has proved its practical value in the prediction of scholastic success.

Intermediate child: A child whose ordinal position is between that of the firstborn and the lastborn.

Junior Secondary: The first three years of secondary schooling in Zambia of which the terminal point is Form III.

Low-achieving pupils: Pupils who obtained either division III or IV in the Junior Secondary School Leaving Examination. Also referred to as Group 2.

Material (economic) environment: Refers to the economic position of the family and its ability to afford a good living.

Motivational environment: The term refers to the attitudes parents and children have towards education, school, teachers and school work.

Only child: A child who has no siblings.

Over-crowding: A high density of persons per room in the house.

Parental attitudes towards education, school and teachers:

The way parents feel or think about education, school and teachers.

Parental education: The level of formal education attained by either parent.

Parental encouragement and support afforded the pupil in his school work: The amount of motivation and help given to a pupil in his school work.

Parental income: The amount of money parents realize out of employment, business, trade, etc.

Parental occupation: Employment, business, trade, etc. of either parent.

Reading habits: Reading material which is available to family members and the extent to which these are actually utilized.

Scholastic achievement: This term is used interchangeably with scholastic attainment to refer to the actual performance of a pupil at school.

Social class: A group of individuals in a society who accept each other as equals, the concept of equality being mediated by similarities in such respects as mode of living, behaviour form, material possessions, type of occupation, amount and kind of education, etc.

Socio-economic status: The level indicative of both the social and the economic position of an individual or group.

Social status: Position of an individual on a scale of social prestige.

Youngest child: The lastborn child. The condition of having no young brother or sister.

This chapter has highlighted the importance of environmental factors in scholastic achievement. It asserts that pupils who fail are held back by environmental circumstances from reaching the level of educational achievement of which they are capable. The second section of the chapter deals with the significance of the study. This is twofold: firstly, a study of the home environment helps teachers in the selection and preparation of teaching materials and experiences; secondly, it can help reduce failure rate in schools by exposing and rectifying weaknesses in a pupil's learning. The rest of the chapter deals with the review of related research and literature pertaining to home environment and scholastic achievement. The chapter ends with:

- a) a general hypothesis: that pupils who obtained division I or II would obtain significantly higher mean scores on items designed to measure the eleven variables investigated in this study than low-achieving (division III and IV) pupils.
- b) a definition of terms as used in the study.

CHAPTER TWO

THE RESEARCH DESIGN

Characteristics of the Sample

The subjects for this study comprised a stratified sample of 200 students who wrote the Junior Secondary School Leaving Examination (J.S.S.L.E.) in 1978. The sample with an average age of 16 was divided into two sub-groups of 100 each. The first group comprised students who obtained division I or II and the second those who had division III or IV. The subjects were matched on group basis in terms of ability and sex. In order to get as much representative a sample as was possible, and in view of the fact that variance in scholastic achievement might be due to variations in the quality of educational provision, e.g. equipment, teachers, etc. It was decided to draw the subjects from four different secondary schools. These were: all-boys' and all-girls' day secondary schools in an urban area (Luanshya Boys' and Luanshya Girls'); and all boys' and all girls' boarding secondary schools in a rural area (Chiwala Boys' and Ibenga Girls'). At each of the four secondary schools, 50 students were selected for the sample (half of these had division I or II certificates and the other half division III or IV).

Control of Ability

Control of ability was necessitated by the fact that some children are more intelligent than others. Therefore, it is this circumstance rather than their environment which may account for a pupil's success or failure in school. The most important factors taken into account in the selection and control of ability were: the criterion measure of division I or II and division III or IV obtained in the Junior Secondary School Leaving Examination (all divisions got more or less an equal proportion in the sample); and the standard scores obtained on a verbal reasoning intelligence test done in 1975 when the pupils wrote their Grade VII Composite Examinations. (These scores on an initial measure of intelligence were used as the matching variable to help assure equivalence of the two groups).

The shortcomings that might have occurred as a result of variations in intellectual ability were overcome by using a matched-groups design; a group of students with division I or II compared with another with division III or IV but both of comparable mean scores on the matching variable. To construct groups

so that they are of equivalent intelligence, there is need to pair the members of the two groups who have equal scores. In this way, the sums and means of the intelligence scores of the two groups are equal. Therefore, in matching groups an attempt was made to equate the two groups with respect to their mean scores on verbal reasoning intelligence test. The matched-groups design assured that groups had essentially equal ability variable values prior to the administration of the questionnaires.¹

It was assumed that, given the more or less equal abilities of the population sample, variance in performance at Junior Secondary School level cannot be attributed to a discrepancy between a child's potentiality but to variations in the home backgrounds.

The Grade VII Composite Examination, a terminal examination written at the end of seven years of primary schooling, was used in the control of ability. The examination is composite in that it combines the purposes of both selection and certification. The selection function of the examination was utilized in this research. The 1978 Junior Secondary School candidates (the present sample) wrote their Grade VII Composite Examination in 1975. Since this examination is competitive and highly selective it is reasonable to assume that all the boys and girls who

1. See Appendix VII for standard scores obtained by the subjects on Verbal Reasoning Intelligence Test.

were selected for the sample at each school, fulfilled the condition of having the ability or academic potential to do well in their Junior Secondary School Leaving Examinations.

The Grade VII Composite Examination has been found to correlate positively with performance in the Junior Secondary School Leaving Examinations.¹ Among the various Grade VII subjects, Special Paper I (Verbal Reasoning Intelligence Test) has been found to correlate highly with all the subject papers. Therefore, it can be regarded as a fairly good general measure of scholastic ability (Ming, 1976:7). Special Paper I has also been found to have the highest predictive validity against performance at Junior Secondary School level, i.e. J.S.S.L. Certificate (Ming, 1976:2). It was for these reasons that it was decided to use this test to gauge the students' scholastic ability. Research evidence outside Africa shows that there is a positive association between a child's score in intelligence tests and his performance in school. Wall, Shonell and Willard (1962:6); Kemp (1955:76); and Lynn (1959:51), have all found that an intelligence test is the best single predictor of how well a child is likely to learn over a whole range of school subjects.

The Criterion Measure

The criterion used was the division system devised to classify successful and unsuccessful candidates in the Junior

1. See appendix IV for a summary of studies pertaining to the predictive validity of Grade VII Examinations.

Secondary School Leaving Examination, a terminal examination written at the end of three years of secondary schooling.

As a school leaving examination, it is intended to certify that candidates have reached a satisfactory level of performance in the Junior Secondary Curriculum and have attained an adequate general education. At the same time, these results are used to select candidates for further training, employment and senior secondary education.

On the basis of performance in the subjects entered for the examination, a Junior Secondary School Leaving Certificate, is awarded.¹ According to this study, those students who obtained division I or II formed the high-achieving group. Caution was exercised in choosing subjects who obtained division II and III. Only students who obtained not more than 15 points in division II and 22 points and above in division III were selected. This was necessitated by the fact that students on the borderline of division II and III could be described as having obtained more or less a similar certificate because of the non-significance of variance in points obtained. However, selection of subjects for division I and IV posed no problem because these are at the opposite ends of the scale.

1. The division of certificate is determined from subject grades as well as other criteria. See appendix III for conditions.

Research Instruments

In order to obtain as comprehensive a background picture as was possible for each of the 200 pupils, two questionnaires were used in the investigation. One questionnaire was completed by the pupils and the other by their parents. It was felt that pupils alone would not have been able to provide all the information that was required. The home background variables tapped were classified in four broad groups. Three of these groups: the cultural, material and motivational factors are interrelated. These groups were considered in isolation only as an expedient device to enable computation of variance on each individual variable between the two groups involved.

Cultural and material factors are likely to be closely related. Poverty in the material sense tends to be accompanied by cultural poverty; parents whose incomes are at the lower end of the scale tend to be less educated and have fewer intellectual interests than parents with large incomes (Fraser, 1968:5). Such parents are also likely to have large families and live in over-crowded homes lacking amenities (Douglas, 1964:36). Occupational levels are also associated with income and education. Parents who are unskilled workers, for example, will often be of low educational attainment and get low incomes.

The motivational aspect of the home environment is likely to overlap considerably with the cultural and material aspects. The type of education which parents themselves have had, for example, is likely to colour their attitudes towards the value of education in general and to affect their aspirations for their children, e.g. constant encouragement is much more likely to occur if parents themselves have had a good educational background, realize what is required of the child and have a practical insight into the part which they themselves need to play. In addition, an educated parent is likely to provide a good material and cultural environment for his children.

However, in the emotional sphere, the factors are likely to be relatively independent of the others since emotional tensions are not special to any social-class. These can be found in all sorts of homes - rich or poor. Fraser (1968:6), has written: "situations which produce emotional tension in the child ... arise in homes of all socio-economic and cultural levels: and although a high standard of living may make discord easier for the parents to bear, there is little evidence that it reduces the strain on the child". The home background variables tapped were classified as follows:

Cultural Factors

1. Parental education.
2. Reading habits of parents and children.

Material (Economic) Factors

3. Parental income.
4. Parental occupation.
5. Housing conditions.
6. Over-crowding.
7. Family-size.
8. Birth-order.

Motivational Factors

9. Parental attitudes towards education, school and teachers.
10. Parental encouragement and support afforded the child at home.

Emotional Factors

11. Emotional satisfaction enjoyed by the pupil at home.

Pilot study

This was conducted at several schools in Luanshya: Mpatamatu Secondary School; Mpatamatu Education Centre; Luanshya Boys' Night School and Luanshya Centre for Continuing Education. Except for Mpatamatu Secondary School (where pupils completed questionnaires during normal day school hours), all questionnaires were completed during night school hours. Students carried the parents' questionnaires to their homes for the parents to complete.

The pilot study was conducted primarily to investigate weaknesses in the questionnaire items. Some items were abandoned because the responses to them proved untrustworthy; others were rephrased to rectify weaknesses.

Administrative procedures and Administration of Research

Instruments

The entire field work took two months. This included trips to the Ministry Headquarters in Lusaka and Regional Headquarters in Ndola to seek permission to conduct the investigation. Only at one school was it possible to collect preliminary data and administer questionnaires as was scheduled. At other schools the exercise was hampered by administrative routines and school extra-curricular and co-curricular activities, e.g. sports, cadets, clubs, etc. Subjects who were still at school took about 45 minutes to complete the questionnaires. Several methods were employed in administering the questionnaires.

I) Subjects who were at day and boarding secondary schools completed questionnaires during their school hours.

II) Parents of pupils who were at day schools completed questionnaires at their homes. These were taken to them by their children.

III) Parents of pupils who were at boarding schools were sent questionnaires to their respective places.

IV) Pupils who had dropped out (at both day and boarding schools) and their parents were sent questionnaires to their respective places.

V) Some questionnaires were administered in person to those parents and pupils who were within easy reach, e.g. a good number of Form III drop-outs had repeated Form III at Education Centres on the Copperbelt. With permission from respective authorities, it was possible to administer questionnaires to these subjects.

VI) For homes which were within easy reach, observation of the physical environment (the house and neighbourhood, household goods and amenities) was conducted.

VII) The home visits also provided an opportunity to the researcher to interview parents on several aspects of their home environment.

It was found necessary to frequent the two day schools in order to collect the questionnaires that pupils took to their parents. Parents were given a ~~week~~[✓] in which to complete ~~and~~ return the questionnaires. With the help of the authorities, most pupils brought the completed parents' questionnaires. There were several cases of parents refusing to complete the questionnaires. This meant that several pupils' questionnaires could not be used because data on the parents' side was missing. The response from those subjects who were sent mailed questionnaires was quite good (although

Some questionnaires never reached the researcher until well over a month). With a follow up, and after initial analysis, it was possible to get and use 80 per cent (160 responses) of which 37 per cent and 43 per cent were for boys and girls respectively. This implies that from a total of 100 pairmates this research used 80 pairmates — a percentage quite representative of the total sample.

In this chapter an attempt has been made to describe the research design. The subjects for this study comprised 200 Junior Secondary School pupils with an average age of 16. These were drawn from four secondary schools and were divided into two sub-groups of 100 each. Pupils were allocated to either group depending on performance in the Junior Secondary School Leaving Examinations (pupils who obtained division I or II formed the first group and those with division III or IV the second group). Although the students performed differently in the Junior Secondary School Leaving Examinations, they had comparable scholastic ability (this is evidenced by their performance in the Grade VII composite examinations which is used for selection to Form I). The study used two questionnaires to tap eleven aspects of the home environment. A pilot study was conducted primarily to check weaknesses in the questionnaires. The chapter ends with a description of how the questionnaires were administered.

CHAPTER THREE

RESULTS

Analysis of Data:

The main statistical analysis took the form of comparing the scores of Group I with those of Group II (i.e. students with division I or II compared with students with division III or IV) on each individual variable of the home environment. The problem was to ascertain whether or not the two groups varied significantly on each variable. One way of comparing groups is to compute the differences of their mean scores. However, this method is unreliable because if the differences in the means is small, this could have occurred due to the fluctuations of chance and not due to the treatment being compared. It is necessary, therefore, to use a statistical formula to ascertain that the differences obtained between the means are real, (i.e. statistically significant) and not mere chance occurrences.

The matched t-test is generally used in comparisons involving a two-matched-groups design. However, this study utilized the A-test, a computationally simpler test that can be used for the same design. Since the statistical equation for the A-test has been derived from the t-ratio, it yields the same results as the t-test as far as the level of significance is concerned (Sandler, 1955:226; McGuigan, 1969:178). The value of A is found by using the following formula:

$$A = \frac{\text{The sum of the squares of the differences}}{\text{The square of the sum of the differences}}$$

The A-test table is entered with $N-1$ degrees of freedom (df), and a value of A is significant at any given level if it is equal to or less than the tabled value.

Table I: Table of A.

For any given value of $n-1$, the table shows the values of A corresponding to various levels of probability. A is significant at a given level if it is equal to or less than the value shown in the table.

n-1	<u>PROBABILITY</u>					n-1
	0.10	0.05	0.02	0.01	0.001	
1	0.5125	0.5031	0.50049	0.50012	0.5000012	1
2	0.412	0.369	0.347	0.340	0.334	2
3	0.385	0.324	0.286	0.272	0.254	3
4	0.376	0.304	0.257	0.238	0.211	4
5	0.372	0.293	0.240	0.218	0.184	5
6	0.370	0.286	0.230	0.205	0.167	6
7	0.369	0.281	0.222	0.196	0.155	7
8	0.368	0.278	0.217	0.190	0.146	8
9	0.368	0.276	0.213	0.185	0.139	9
10	0.368	0.274	0.210	0.181	0.134	10
11	0.368	0.273	0.207	0.178	0.130	11
12	0.368	0.271	0.205	0.176	0.126	12
13	0.368	0.270	0.204	0.174	0.124	13
14	0.368	0.270	0.202	0.172	0.121	14
15	0.368	0.269	0.201	0.170	0.119	15
16	0.368	0.268	0.200	0.169	0.117	16

Table ITable A.

(Continued)

17	0.368	0.268	0.199	0.168	0.116	17
18	0.368	0.267	0.198	0.167	0.114	18
19	0.368	0.267	0.197	0.166	0.113	19
20	0.368	0.266	0.197	0.165	0.112	20
21	0.368	0.266	0.196	0.165	0.112	21
22	0.368	0.266	0.196	0.164	0.110	22
23	0.368	0.266	0.195	0.163	0.109	23
24	0.368	0.265	0.195	0.163	0.108	24
25	0.368	0.265	0.194	0.162	0.108	25
26	0.368	0.265	0.194	0.162	0.107	26
27	0.368	0.265	0.193	0.161	0.107	27
28	0.368	0.265	0.193	0.161	0.106	28
29	0.368	0.264	0.193	0.161	0.106	29
30	0.368	0.264	0.193	0.160	0.105	30
40	0.368	0.263	0.191	0.158	0.102	40
60	0.369	0.262	0.189	0.155	0.099	60
120	0.369	0.261	0.187	0.153	0.095	120
	0.370	0.260	0.185	0.151	0.092	

Printed from: Sandler, J. 1955. 'A test of the significance of the differences between the means of correlated measures, based on a simplification of student's t ', British Journal of Psychology 46, 225-226.

Table II: Mean Scores for Group 1 and Group 2 on each variable

Variable	1	2	3	4	5	6	7	8	9	10	11
Group 1	8.35	33	12.05	7.1	7.23	6.51	2.35	1.3	16	21	50
Group 2	5.10	22	8.25	2.15	3.02	2.12	2.41	1.3	11	14	43

Key to variable numbers

Variable	1:	Parental educational qualifications.
Variable	2:	Reading habits in the home.
Variable	3:	Parental income.
Variable	4:	Parental occupation.
Variable	5:	Housing conditions.
Variable	6:	Over-crowding.
Variable	7:	Family-size.
Variable	8:	Birth-order.
Variable	9:	Parental attitudes to education, school and teachers.
Variable	10:	Parental educational support and encouragement afforded the child at home.
Variable	11:	Emotional satisfaction enjoyed by the pupil at home.

Table III: The level of significance of the differences between Group 1 and Group 2 on each variable.

Variable No.	Calculated Value of A	Tabled Value of A	Level of significance
1.	0.125	0.155	0.01
2.	0.0474	0.099	0.001
3.	0.148	0.155	0.01
4.	0.034	0.099	0.001
5.	0.0886	0.099	0.001
6.	0.036	0.099	0.001
7.	6.52	0.369	0.10
8.	9	0.369	0.10
9.	0.0292	0.099	0.001
10.	0.1139	0.155	0.01
11.	0.0323	0.099	0.001

Scoring Procedures

The questionnaires (overall scale) contained a number of sub-scales each of which measured the various aspects of the home environment investigated in this study. Scoring was done in three ways:

- 1) Response counting: fill-in and categorical responses required counting the number of responses made by respondents belonging to either Group 1 or 2, e.g. the number of 'yes' responses indicated by members of one group on a particular item or variable.

2) Respondent counting: where categorical or nominal responses were obtained on single items, the number of respondents (belonging to either Group 1 or 2) who gave a particular response to such items were counted, e.g. the number of high and low-achievers staying in crowded high density areas.

3) Scale scoring: where scales or rank-order responses were used, the researcher assigned a numerical score to each response. The responses, arranged in hierarchical order, measured the degree of frequency or magnitude (each response was assumed to be a quantitative and/or qualitative measure of judgement or feeling). Therefore, responses that had the highest value in terms of creating conditions which enhance school success were awarded more scores.

Measures were taken to curb against ambiguity and subjectivity, e.g. responses such as frequently, often, quite often, sometimes, etc. may mean different things to different people. In order to ensure that the responses were standard, i.e. meant the same thing to all respondents, it was indicated in the questionnaires what was meant by such responses, e.g. more often (7 times per week), often (5-6 times per week), quite often (3-4 times per week), sometimes (1-2 times per week), etc.

Cultural Factors

Variable 1: Parental educational qualifications.

This variable refers to the level of formal education attained by both parents. A rating was made on a seven-point scale as follows:

<u>Education</u>	<u>Scores</u>
University degree	7
Post secondary diploma	6
Form IV - Form V or VI	5
Form I - Form III	4
Grade V - Grade VII or Standard III - Standard VI	3
Grade I - Grade IV or Sub A - Standard II	2
Never been to school	1

The scores obtained by both parents were added so that the highest probable points that could be scored were 14 and the lowest 2. Since $n=80$ in this study, the degrees of freedom (df)=79. Reference to the A-test table shows that the nearest number to 79 is 60. This number was hence taken as the degrees of freedom. The value of A is 0.125. Reference to the A-test table shows that for 60 degrees of freedom, the tabled value nearest to 0.125 is 0.155. The value of A is less than the tabled value and hence A is significant at 0.01 level, the odds against such a difference occurring by chance being 100 to 1, i.e. $P=0.01$. The superiority of the mean scores of Group 1 (8.35) over Group 2 (5.10) has thus been proved. This

finding agrees with the hypothesis that pupils in Group 1 will score more on parental educational qualifications than pupils in Group 2.

Variable 2: Reading habits in the home.

This variable was assessed by using the following items:

- a) Frequency with which parents or any other member of the family bought newspapers and/or magazines.
- b) Frequency with which father read books.
- c) Frequency with which father read newspapers and/or magazines.
- d) Frequency with which mother read books.
- e) Frequency with which mother read newspapers and/or magazines.
- f) Frequency with which any other member of the family (other than the sample pupil) read books.
- g) Frequency with which any other member of the family (other than the sample pupil) read newspapers and/or magazines.
- h) Frequency with which the sample pupil read books (other than school text books).
- i) Frequency with which the sample pupil read newspapers and/or magazines.

For items a) up to i), points were awarded on a five-point frequency scale as follows:

<u>Scale</u>	<u>Scores</u>
More often	5
Often	4
Quite often	3
Sometimes	2
Never	1

j) Father's library membership

k) Mother's library membership. One point was awarded if any parent was member of a library.

l) Number of books available in the home. Points were awarded on a ten-point scale as follows:

<u>No. of books</u>	<u>Scores</u>
Over 91	10
81 - 90	9
71 - 80	8
61 - 70	7
51 - 60	6
41 - 50	5
31 - 40	4
21 - 30	3
11 - 20	2
1 - 10	1
0	0

The highest probable points that could be scored on this variable were 67 and the lowest 10. The calculated value of A is 0.047. The tabled value (0.099) is greater than the calculated value of A, hence the difference is statistically significant. The odds against such a difference occurring by chance being 1000 to 1, i.e. $P=0.001$. This result is in favour of pupils in Group 1 who had more mean scores (33 as compared to 22 for Group 2). The hypothesis that pupils in Group 1 will score more on reading habits in the home than pupils in Group 2 has thus been proved.

Material (Economic) Factors

Variable 3: Parental Income and Wealth.

This was assessed on the basis of how much money the father earned per month from his employment and/or business. This was met with an obvious problem; some parents (more especially those in the low-income bracket) were not prepared to reveal their incomes. Some of these parents indicated that their incomes were a secret. Those who did indicate their incomes had a tendency to inflate them to a point where they became questionable. To check this, a father's income was matched against his occupation (this can give a general picture of how much somebody earns although some low-status occupations are more highly paid than high-status occupations). Where matching proved beyond any reasonable doubt that the income was

fake, this was not used. Self-employed parents or businessmen had a problem of stating their monthly earnings because these varied from month to month. Where a self-employed parent was not very sure about his monthly earnings, these were also not used in the study. This variable also took into account earnings by the mother or other members of the family who contributed towards the maintenance of the household. Earnings from such people can clearly make a difference where the upkeep of the home is concerned. All incomes in the family were added up. Points were awarded as follows:

<u>Scale</u>	<u>Scores</u>
Over K300	7
K251-300	6
K201-K250	5
K151-K200	4
K101-K150	3
K 51-K100	2
Below K51-00	1

Since some parents did not indicate their incomes and since some incomes indicated could not be relied upon, only 72 pairs of pupils could be compared on this variable. This did not, however, change in any way the degrees of freedom which still remained 60. The calculated value of A is 0.148. Reference to the A-test table shows that for 60 df., the tabled value next to 0.148 is 0.155. The value of

the tabled value nearest to 0.148 is 0.155. The value of A is less than the tabled value and hence statistically significant at 0.01 level. The odds against such a difference occurring by chance being 100 to 1, i.e. $P=0.01$. The superiority of Group 1 (12.05 mean scores) over Group 2 (8.25 mean scores) has thus been proved. The hypothesis that pupils in Group 1 will score more on parental income than pupils in Group 2 has thus been proved.

Variable 4: Parental occupation.

Occupation was classified in two broad groups of manual and non-manual occupations. Classification posed problems because some parents were not specific about the kind of work they did. To ascertain, at least roughly, the category to which a particular parent belonged, occupation was matched against the salary or wage (the lower the salary or wage the lower is the occupational group to which a person belongs). However, caution was exercised because some manual occupations are more highly paid than non-manual occupations, e.g. a supervisory foreman may get more money than a clerk. Some cases of unspecified occupations were classified in this way. Those which could not be classified satisfactorily were omitted. Miller (1970), in his British study of school achievement and social class has ranked occupational categories according to general status, level of qualification and position in hierarchy. Points

were awarded on Miller's (1970:262), eight-point occupational status hierarchy scale as follows:

<u>Scale</u>	<u>Scores</u>
<u>Non-Manual occupations</u>	
1. Professional and high administrative, e.g. doctors, lawyers, bankers, accountants, teachers.	8
2. Managerial and executive, e.g. men who owned their own business, or who managed a business for the owner.	7
3. Supervisory, white-collar, e.g. those in the mass media and publishing industries.	6
4. Routine clerical, e.g. cashiers, and clerks.	5
<u>Manual occupations</u>	
5. Foreman, supervisory (manual), e.g. construction foreman.	4
6. Skilled Manual - men who have served an apprenticeship in a trade, e.g. motor mechanic.	3
7. Semi-skilled manual - men in occupations for which some training and skill is necessary, e.g. bus drivers.	2
8. Unskilled manual - men engaged in unskilled manual labour, requiring neither training nor responsibility, e.g. farm workers.	1

Since some cases were omitted, only 75 pairs of pupils instead of 80 could be used. This did not however alter the degrees of freedom since the nearest number was still 60. The calculated value of A is 0.0345. Reference to the A-test table shows that for 60 degrees of freedom, the value of A is less than the tabled value of 0.099 and hence A is statistically significant at 0.001 level. The odds against such a difference occurring by chance being 1000 to 1, i.e. $P=0.001$. This result is in favour of pupils in Group 1 who had more mean scores on this variable (7.1 as compared to 2.15 for Group 2). The hypothesis that pupils in Group 1 will score more on parental occupation has thus been proved.

Variable 5: Housing conditions.

This variable assessed the following:

- a) Amenities in the house: electricity; running water; bathroom and toilet (neither shared by neighbours). The availability of each facility in the home was awarded one point.
- b) Household goods: these were as listed on item 8 of the students' questionnaire (see appendix II). The points were awarded on a five-point scale as follows:

<u>No of household goods</u>	<u>Scores</u>
Over 16	5
12 - 16	4
6 - 11	3
1 - 5	2
0	1

- c) Location of the house (low, middle or high density urban settlement, shanty compound, village). The percentages of pupils staying in particular localities were taken. It was found that whereas 78 per cent of low-achieving pupils (Group 2) lived in crowded high density areas (a good number of them in shanty compounds) with poor amenities, only 43 per cent of high-achieving pupils (Group 1) lived in such areas. And whereas 33 per cent of high-achieving pupils lived in spacious low-density areas with better amenities, only 10 per cent of low-achieving pupils lived in such areas.

For items a) and b), the highest probable points that could be scored were 9 and the lowest 1. The calculated value of A is 0.089. Reference to the A-test table shows that this value is less than the tabled value of 0.099 for 60 degrees of freedom. Thus A is significant at the 0.001 level, the odds against such a difference occurring by chance being 1000 to 1, i.e. $P=0.001$. The significance of the difference proves the superiority of Group 1 pupils who had more mean scores (7 as against 3 for Group 2) than Group 2 pupils. Thus the hypothesis that pupils in Group 1 will score more on housing conditions than students in Group 2 has been proved.

Variable 6: Over-crowding.

This variable was assessed by the density of persons per room, taking into account all people living in the house and the number of rooms available. Points were awarded on a five-point scale as follows:

<u>No. of persons</u>	<u>No. of rooms</u>	<u>Scores</u>
1	1	5
2	1	4
3	1	3
4	1	2
over 4	1	1

The calculated value of A is 0.036. Reference to the A-test table shows that this value is less than the tabled value of 0.099 for 60 degrees of freedom. Therefore, A is statistically significant at the 0.001 level, the odds against such a difference occurring by chance being 1000 to 1, i.e. $P=0.001$. Since Group 1 had more mean scores (6.51 as against 2.12 for Group 2) on this variable, its superiority is proved. Thus the hypothesis that pupils in Group 1 will score more on over-crowding than pupils in Group 2 has been proved.

Variable 7: Family-size.

This was assessed by the number of living children in the family. The sample pupil and those children not living with the family at the time of the study were included.

Points were awarded on a five-point scale as follows:

<u>No. of Children</u>	<u>Scores</u>
1 - 2	5
3 - 4	4
5 - 6	3
7 - 8	2
Over 8	1

The calculated value of A is 6.52. Reference to the A-test table shows that this value is greater than any tabled value for 60 degrees of freedom. Hence, A is not statistically significant. The non-significance of the differences between the two groups is also reflected in their mean scores which were the same (2.35 for Group 1 and 2.41 for Group 2).

Therefore, the hypothesis that pupils in Group 1 will score more on family-size than pupils in Group 2 has been disproved.

Variable 8: Birth-order.

This variable took into account the ordinal position of the sample pupil in the family. Firstborns, onlys and youngest children were awarded 2 points, whereas intermediates were awarded 1. The calculated value of A is 9. Reference to the A-test table shows that this value is greater than any

tabled value for 60 degrees of freedom. Therefore, A is not statistically significant. The non-significance of the differences between the two groups is also reflected in their equal mean scores (1.3 for Group 1 and 1.3 for Group 2). Therefore, the hypothesis that pupils in Group 1 will score more on birth-order than pupils in Group 2 has been disproved.

Motivational Factors

Variable 9: Parental attitudes to education, school and teachers.

This variable was assessed by using the following items:

- a) Frequency with which each parent talked good of education, school and teachers. The comments that parents make on the value of education, school and teachers have a profound effect on the attitudes pupils acquire later on regarding the value of education.
- b) Frequency with which each parent visited or wrote to schools to enquire about the pupil's educational progress. This indicates a favourable disposition towards pupil's schooling and education in general.

For the items above, points were awarded on a five-point frequency scale as follows:

<u>Scale</u>	<u>Scores</u>
More often	5
Often	4
Quite often	3
Sometimes	2
Never	1

- c) Educational qualification each parent wished sample pupil to attain. Parents who are more ambitious for their children are likely to motivate them more so that they can attain higher education. Points were awarded on a four-point scale as follows:-

<u>Level of education</u>	<u>Scores</u>
University degree	4
Post secondary diploma	3
Form V	2
Form III only	1

- d) This item solicited information on whether each parent wanted the sample pupil to stop or continue with schooling after Form III. Points were awarded as follows: one for parents who wanted their pupils to stop at Form III level; and two for those parents who wanted their pupils to continue with schooling after Form III.

- e) Occupation each parent wished the child to take up. This is likely to motivate the parents to encourage their children so that they can at least attain the formal education that would make it possible for them to enter the required professions. Points were awarded on a five-point scale as follows:

<u>Education and number of years in training</u>	<u>Scores</u>
Degree - four-five years after Form V	5
Diploma - two-three years after Form V	4
Form V and one year training	3
Form III and one or two years training	2
Form III only	1

All the points scored on the four items were added.

The highest probable points that could be scored were 42 and the lowest 9. The computed value of A is 0.029.

Reference to the A-test table shows that this value is less than the tabled value of 0.99 at 60 degrees of freedom and is therefore statistically significant at the 0.001 level.

The odds against such a difference occurring by chance is 1000 to 1, i.e. $P=.001$. Since pupils in Group 1 had more mean scores (16 as against 11 for Group 2 pupils), the superiority of Group 1 on this variable is proved.

Therefore, the hypothesis that pupils in Group 1 will score more on parental attitudes to education, school and teachers has been proved.

Variable 10: Parental educational support and encouragement afforded the child at home.

This variable was assessed by using the following items:

- a) The frequency with which each parent encouraged or helped the sample pupil to do homework or any other school work at home. Four similar items were used. The points were added up. Points were awarded as follows:

<u>Scale</u>	<u>Scores</u>
More often	5
Often	4
Quite often	3
Sometimes	2
Never	1

- b) The frequency with which each parent insisted that the sample pupil should continue with school after Form III. Points were awarded on a three-point scale as follows:

<u>Scale</u>	<u>Scores</u>
Frequently	3
Rarely	2
Never	1

- c) The frequency with which each parent discussed educational matters with the sample pupil. Two items appeared in the parents' questionnaire and one in the students' questionnaire. The points were added up. Points were awarded as follows:

<u>Scale</u>	<u>Scores</u>
More often	5
Often	4
Quite often	3
Sometimes	2
Never	1

- d) The frequency with which parents gave the pupil praise or presents for good work done at school. A child needs approval and appreciation for every achievement from his parents. Rewards such as approval, praise, presents, etc. enhance learning by helping to strengthen the association between learning and such rewards. Points were awarded on a three-point scale as follows:

<u>Scale</u>	<u>Scores</u>
Frequently	3
Rarely	2
Never	1

- (e) Availability of study room or any place where a pupil is able to work without interference. Provision of such a place shows parental concern for pupil's school progress. One point was awarded if such a place was provided.

The highest probable points that could be scored were 83 and the lowest 18. The computed value of A is 0.114. Reference to the A-test table shows that this value is less than the tabled value of 0.155 at 60 degree of freedom. Therefore, A is statistically significant at the 0.01 level. This means that the differences between the two groups can occur by chance only once in a hundred, i.e. $P=0.01$. The superiority of Group 1 pupils whose mean scores were 21 as against 14 for Group 2 is thus proved. Therefore, the hypothesis that pupils in Group 1 will score more on parental educational support and encouragement than pupils in Group 2 has been proved.

Emotional Factors

Variable 11: Emotional Satisfaction Enjoyed by the Pupil at Home.

The researcher is aware that tapping information in the emotional field poses a lot of problems because this is a sensitive area. Observation (though this takes a long time) could probably have been the best way to tap information in this field. However, the time and funds available could not allow the researcher to embark on such an exercise - thus resort to questionnaires.

The following items were used to assess situations likely to eventuate in pupils' emotional problems:

- a) Degree of happiness demonstrated by parents as husband and wife.
- b) Degree of unhappiness demonstrated by the sample pupil at home. This item appeared in both pupils' and parents' questionnaires.

A home in which relations are strained does not provide a good environment for success at school. On the other hand, a home where happiness and a friendly atmosphere prevail favours success at school. A child from such a home will concentrate and do well at school because he has no basic psychological problems to which to divert his attention.

For item a), points were awarded on a five-point scale as follows:

<u>Scale</u>	<u>Scores</u>
More often	5
Often	4
Quite often	3
Sometimes	2
Never	1

For item b), points were awarded on a five-point scale. Points were scored in reverse order because the item was negatively stated.

<u>Scale</u>	<u>Scores</u>
More often	1
Often	2
Quite often	3
Sometimes	4
Never	5

- c) Polygamous and monogamous households. A polygamous household is more prone to conflict and tension than a monogamous one. In a polygamous household, rivalries and jealousies between the two or more sides comprising the household may result in serious emotional problems for children. The two sides will always have a craving for the father's/husband's attention and favour. A pupil from a monogamous household was awarded one point whereas one from a polygamous one got zero. However, the fact that a household is polygamous does not necessarily mean that it is beset by emotional problems. There are exceptions, but the fact that polygamous households are more prone to conflict and tension than monogamous ones is a general rule.

- d) This item solicited information on whether there was harmony between the mother and father on some matters concerning their pupil's education and future occupation: the educational qualification either parent wished the child to attain; the occupation either parent wished the pupil to take up; and whether or not either parent wanted the child to stop schooling at the end of Form III or continue with senior secondary education. Parents who showed harmony in their opinions were awarded one point on each aspect whereas those who showed marked ~~disagreement~~ got zero.

Agreement or disagreement between parents on matters such as pupil's education may be a manifestation of the existence of conflict and tension between them. Apart from the emotional problems that a pupil may suffer because of conflict between parents, lack of consensus between parents on pupil's education is likely to affect his levels of aspirations and may eventuate in scholastic failure.

- e) Parents divorced or separated. A broken home is likely to be a source of emotional problems which may be obstacles to a child's ability and motivation to succeed in school. Through the

absence of either parent, the child may also be deprived of parental help, encouragement and guidance - all of which are necessary for scholastic success. However, not all broken homes are beset by emotional problems. Of course there are exceptions but this is the general rule. Two points were awarded if parents still lived together, one if separated and zero if divorced.

- f) Either parent dead. Loss of a beloved parent may have serious emotional problems for the child. This also means that the child is deprived of parental support and guidance. Two points were awarded if both parents were still living and one if either died.
- g) Frequency with which the sample pupil discussed problems with both parents. Discussion with children is a form of parent-child interaction and a sign of parental concern over children's problems. It also indicates that a friendly atmosphere obtains between the parent and the child and thus aids emotional adjustment. Through discussion, parents can also provide the skills which may aid pupil's scholastic success. Points were awarded on a five-

point frequency scale as follows:

<u>Scale</u>	<u>Scores</u>
More often	5
Often	4
Quite often	3
Sometimes	2
Never	1

- h) Frequency of punishment. Punishment in its many forms, e.g. corporal punishment, ridicule, criticism, etc. is injurious to the emotional adjustment of children and may eventuate in scholastic failure. A tension-ridden atmosphere is a hot-bed for the development of unfavourable attitudes which are not conducive to learning, respect of authority and development of a well-integrated personality.

Points were awarded on a five-point frequency scale with parents frequently punishing their children getting less points and those who rarely punished getting more. The order of awarding points was reversed because punishment has deleterious effects on the scholastic achievement of pupils.

<u>Scale</u>	<u>Scores</u>
More often	1
Often	2
Quite often	3
Sometimes	4
Never	5

- i) Frequency of hospitalization. The academic achievement of a child substantially depends on his good physical health. Illness causes absence from school, saps a child's vitality and causes him to perform below his capacity in school work. There are also emotional problems^s that may arise as a result of the child thinking too much about his poor health. This item appeared in both pupils' and parents' questionnaires. Points were awarded on a five-point scale -- with more scores given to pupils who had never been hospitalized and less given to those who were frequently hospitalized.

<u>Scale</u>	<u>Scores</u>
More often	1
Often	2
Quite often	3
Sometimes	4
Never	5

- j) General condition of father's and mother's health was measured by the frequency of hospitalization in a year. Prolonged illness of either or both parents may have serious emotional problems for the child. The child's attention will be diverted from school work as he broods over his upkeep should his beloved

father or mother die. Points were awarded on a five-point frequency scale -- with parents who had never been hospitalized getting more points and those who had been getting less.

<u>Scale</u>	<u>Scores</u>
More often	1
Often	2
Quite often	3
Sometimes	4
Never	5

The highest probable points that could be scored were 58 and the least 11. The computed value of A is 0.032. Reference to the A-test table shows that this value is less than the tabled value of 0.099 at 60 degrees of freedom. Therefore, A is statistically significant at the 0.001 level. The odds against such a difference occurring by chance being 1000 to 1, i.e. $P = 0.001$. This significance proves the superiority of Group 1 pupils whose mean scores were 50 as against 43 for Group 2 pupils. This means that pupils in Group 1 were more favourably disposed as regards emotional satisfaction than pupils in Group 2. The manner in which points were awarded in this field meant that those pupils who obtained more points experienced less emotional problems in their homes than those

who obtained less. Therefore, the hypothesis that pupils in Group 1 will score more on emotional satisfaction than pupils in Group 2 has been proved.

This chapter started by discussing the statistical analysis used in this study to ascertain whether or not the two groups of high and low-achievers varied significantly on each variable. The A-test was used in the place of the t-test. The statistical equation for the A-test has been derived from the t-ratio and as such yields the same results as the t-test as far as the level of significance is concerned. The second section of the chapter described the scoring procedures used: responses and respondent counting; and scale scoring. The rest of the chapter describes the eleven aspects of the home environment investigated and the way(s) in which they were assessed. The results of the A-test on each variable are also given. This study has found statistically significant differences between high and low-achievers on all, except two variables (family-size and birth-order). The next chapter will discuss reasons for the significance or non-significance of the differences between high and low-achievers on these variables.

CHAPTER FOUR

DISCUSSION OF RESULTS

Parental Education and Reading Habits

The differences between high and low-achievers on parental education and reading habits were found to be statistically significant. This shows that both variables are potent factors in the scholastic achievement of secondary school pupils. According to this study, high-achievers came from homes with better educated parents and more favourable reading habits than low-achievers. Among high-achievers' parents, for example, 56 per cent of both parents had done Junior Secondary School whereas only 10 per cent of low achievers' parents had done the same schooling. The homes of high-achievers had also more books and other reading materials than homes of low-achievers. It was saddening to note that some homes of low-achievers had virtually no reading materials apart from a few school textbooks and an occasional bible.

Among the limited African studies so far done, several agree with the finding that the educational level of both parents is of vital importance in the scholastic achievement of pupils. Foster (1965:189), for example, found that the son of a University graduate in Ghana has more than eight times as good a chance of attaining secondary education as has a boy whose father has completed only primary education.



Wallace (1974), has reported Brownstein's East African research which has ascertained that the background variable of father's education is a key factor affecting the educational chances of the child. Wallace (1974), in her own study conducted in rural Buganda found a statistically significant relationship between the education of the father and mother and the level of education obtained by the child. Among studies done elsewhere, Bhatnagar (1952); Griffiths (1958); Bledsoe (1959); Wall, Shonell and Willard (1962); Evans (1962); Swift (1965); Fraser (1968); and Dale and Griffiths (1970); have established that a close and statistically significant relationship obtains between parental education and the scholastic achievement of pupils.¹

Although there is lack of evidence on the relationship between reading habits and scholastic achievement in Africa, some Western studies subscribe to the finding that there is a statistically significant relationship between the two (Fraser, 1968; Dale and Griffiths, 1970; Morton-Williams, 1970; and Burgers, 1973).

The statistically significant differences between high and low-achievers on the two variables can be explained by the greater opportunities children with educated parents have for learning. The richer and more varied the intellectual stimulation the greater the child's opportunity for learning. Differences in the intellectual quality of the home may

1. Most citations in this chapter do not bear page numbers because they have been indicated in appropriate sections of the first chapter.

have influence on the scholastic achievement of the pupil because they may be instrumental in transmitting certain ideas and attitudes affecting pupils' motivation and levels of aspirations.

Educated parents have the ability to respond to the child's school needs whereas less-educated or uneducated ones are unable because they are ignorant about what goes on inside the school. Parental ignorance about homework requirements, for example, may account for a pupil's poor school work. Less-educated or uneducated parents have missed the experience of secondary school life and studies which could help them with their children's difficulties. It is not possible for such parents either to follow what their children are doing at school or to understand fully what the school requires of them as parents. This is irrespective of how interested or how anxious such parents may be to encourage their children in their school work.

In addition, children with educated parents are likely to be exposed to a rich reservoir of English vocabulary and general knowledge. This is not only acquired through the reading materials available but also through the efforts of the parents in reading to their children and [~]conversing with them on all matters of interest. Fraser (1968:46), contends that the general reading habits of parents are likely to influence indirectly the verbal development and consequently the school progress of their children.

The reference to language development and its effect on the scholastic achievement of pupils needs exposition in the light of the circumstances obtaining in Zambian schools. The child's scholastic achievement is related to his ability to manipulate the medium of instruction (English in the case of Zambia). Therefore, an early exposure of English through its use at home and other places can prepare the child for a more effective participation in academic activities. This means that children who come from illiterate homes where English is not spoken come to school with a disadvantage. A child from a family with no idea of English is at a loss at school because he can neither understand what the teacher is saying, nor can he express himself clearly. On the other hand, homes which use English have a distinctive quality of educational value in that they help pupils acquire skills which are obviously fundamental to school success.

Generally, in an intellectual climate, the parents have both the time and ability to encourage and guide their children so that they can succeed in school. As the child grows older, he will pick up almost as much general knowledge at home as in the classroom. On the other hand, a child from a poor intellectual climate has his stimulation reversed. His parents, apart from knowing very little of any life except their own, have neither the time, ability nor the disposition to impart what little they know. In such an

intellectual background, the child's whole universe is circumscribed. Many of the statements from teachers and books will always remain meaningless because the pupil cannot associate them to familiar experiences in his environment.

Therefore, a child from an impoverished academic cultural background is confronted by a cultural conflict situation at school. He cannot fit in the school system as readily as a child with educated parents whose backgrounds and interests are the same as those of the teachers the child would meet at school. Teachers and parents must recognize the importance of a rich academic cultural background in the scholastic achievement of pupils. Improved educational attainment is mostly likely to occur if a rich academic cultural background is provided.

Parental Income

This study found a statistically significant difference between high and low-achievers on this variable. This implies that parental income plays a vital role in the scholastic achievement of secondary school pupils in that it creates conditions which are a help to school success. This finding concurs with many researches done outside Africa (Bhatnagar, 1952; Floud, et al., 1956; Coster, 1959; Evans, 1962; Burt, 1961; Swift, 1965; and Dale and Griffiths, 1970). In Africa, Bakare (1972); Wallace (1974); and Silvey (1976), lend support to the finding that parental income influences the scholastic achievement of pupils.

The statistically significant difference between high and low-achievers on this variable can be explained by the way socio-economic differences lead to distinct patterns of behaviour. These are marked by variations in the material environment and the values and attitudes that a particular family has towards education and life in general. Where material things are concerned, it is a truism to say that the prior satisfaction of basic needs is necessary before human beings can become concerned with and perform higher-level functions. With pupils, the adequate satisfaction of nutritional needs and the need for sleep and rest create conditions conducive to successful school work. From the foregoing, it is clear that children from low-income bracket homes may do poorly in school because their educational efforts are blocked by more urgent unfulfilled physiological needs, e.g. hunger which sap their energies. Deficiencies in basic needs cause a deflection of energy and attention' from school work. A pupil's energy and attention are now directed towards the need to satisfy his immediate needs. Education (which is a distant goal) becomes less urgent and irrelevant in the eyes of the pupil. Unless physiological needs are met, the desire to learn will not emerge. Therefore, a pupil from an impoverished environment may lack motivation and powers of concentration necessary for success in school work.

Upper stratum families are also able to manipulate and make use of existing opportunities for ensuring greater scholastic success for their children. These are able to enroll their children in fee-paying English medium nurseries and kindergartens. Such institutions contribute to a child's mastery of English and place him in a more advantageous position later on at school than a child from a poor family whose parents are not able to utilize such services.

Parental Occupation

This study found that parental occupation is a potent factor in the scholastic achievement of secondary school pupils (see Table III for level of significance). Outside Africa, this finding concurs with studies conducted by Collins (1954 and 1955); Griffiths (1958); Bledsoe (1959); Derrick (1962); Evans (1962); Douglas (1964); Swift (1965); Fraser (1968); Miller (1970); Dale and Griffiths (1970); Floud (1970); and Roy (1976). In Africa, Wallace (1974), has reported Foster and Brownstein as having found that the background variable of father's occupation affects the educational chances of children. Wallace (1974), in her own study conducted in rural Buganda found similar results. Yolo's (1971:11-12), study of the socio-economic background in three types of schools in Nigeria also found that parents' occupations influence selection into secondary grammar schools. It has also been found that the son of a farmer in Ghana and Nigeria is about 12 times and

10 times respectively less likely than a boy whose father is a professional, executive, teacher or clerk to enter a secondary school.¹

The fact that children with parents in non-manual occupations do better than children with parents in manual occupations can be explained in two ways. Firstly, such children have more educated parents (ascent to high-status occupations depends on education) and as such may be exposed to a stimulating rich academic environment. Secondly, such children are more likely to come from well-to-do homes because educated parents are more likely to have higher-paying jobs than less-educated or uneducated ones. It is clear that the standard of living in the home and the nutritional state of the child depend on family income. A child from a poor home lacks stimulation in a number of ways and cannot learn effectively in school because he is confronted by unfulfilled physiological needs.

This difference in performance between the two groups can also be explained by the motivational patterns and basic beliefs parents with high-status occupations have. High-status parents believe that they can master the environment and as such encourage their children to plan for

1. See Datta, A. 1979 Education and Society with special reference to Africa. Lusaka: The University of Zambia, P.81.

their future through continued education. On the other hand, lower-status parents lack confidence in themselves, have a fatalistic outlook and believe that all successes come through sheer luck and not through careful planning or perseverance (Craft, 1970:21; Sugarman, 1970:24). It is this fatalistic attitude that reduces the motivation of lower-class children to embark on long-term goals such as education.

The material handicap of working-class children deprives them of future-orientation, thus making them concentrate on immediate material rewards. Since education, a long-term goal, is seen as irrelevant in the satisfaction of immediate needs, these pupils do not concentrate on school work and thus do badly. Researchers in the West have established that non-manual families are future oriented whereas working-class families are present oriented. Bloom, Davis and Hess (1965:73), for example, contend that the patterns of future-time orientation and delayed gratification (necessary for successful academic performance) are much more common among children of non-manual workers than among those of manual workers. Therefore, children from high-status families are likely to do better in their school work because they are future-oriented, and in as much as they value and recognize the benefits of extended schooling.

It is in the interest of the teachers to help parents and children in low occupational groups to change their motivational patterns so that they too can work for rewards and goals which are more distant and more rewarding.

Housing Conditions and Over-Crowding

This study found that both housing conditions and over-crowding are potent factors in the scholastic achievement of secondary school pupils (see Table IV for the level of significance). These findings compare very well with other findings in the material environment (paternal income and occupation) because they are closely interrelated. A well-to-do parent or one who has a high-status occupation is likely to provide better housing and amenities for his family. Wall, Shonell and Willard (1962); Evans (1962); and Douglas (1964), subscribe to the finding that housing conditions influence pupil performance. Griffiths (1958); Evans (1962); Wall, Shonell and Willard (1962); Hill and Giammateo (1963); Douglas (1964); Wiseman (1964); and Floud (1970), have found that over-crowding impedes scholastic progress.

Amenities and household goods are labour saving devices (although not all household goods are labour saving). Therefore, children from homes with good amenities and a lot of goods are able to save time which they may spend on school work. On the other hand, children from homes with poor amenities and few goods may spend more time on household

duties and have little or no time to spend on their school work. Burt (1961:119), has observed that domestic duties have adverse effects on the scholastic achievement of pupils. In this study, it was found that low-achieving day school girls indulged more often in domestic duties than high-achieving day school girls.

The availability of many amenities and household goods does not only save time and labour, but also increases the stimulation and general knowledge of the children. In this study, 78 per cent of low-achievers lived in crowded high density areas with few and poor amenities, whereas only 43 per cent of high-achievers lived in such areas. And whereas 33 per cent of high-achievers lived in spacious low density areas with many and better amenities, only 10 per cent of low-achievers lived in the same areas. With regard to household goods, low-achievers recorded low on a scale designed to measure availability of household goods than high-achievers.

Lack of a variety of stimulation in the home is one of the factors which affect children's lack of readiness and progress at school. Different objects in the home can help stimulate a child's thinking, ^{and} creative abilities and enlarge his knowledge and experience. An environment which does not provide the stimulus for intellectual growth is a cause of scholastic failure. Therefore, a child who lives in an environment rich in experience has an advantage over one who

lives in an environment poor in experience because the latter is deprived of elements essential for intellectual development. Visits of pupils to places of interest outside their homes and neighbourhood, for example, stimulate them in many ways and increase their understanding of the world they live in. On the other hand, confinement to one area limits the range of pupil experience and depresses the level of their ambition because they are unaware of what goes on in the outside world. This research revealed that among high-achievers, 62 per cent had frequent visits to places of interest outside their own area or district, whereas only 34 per cent of low-achievers had such visits.

With respect to over-crowding, it is a truism to say that a secondary school pupil needs privacy and a room for study. Secondary school work requires a lot of sacrifices on the part of the pupil, e.g. he has to get involved in school work even after normal school hours. Children from over-crowded homes do badly in school because they are deprived of quiet and privacy. If they are made to share beds, they may sleep badly and through tiredness and lack of sleep be unable to concentrate on school work because of these unfulfilled physiological needs. Interruption of a pupil by other people in a crowded home may also adversely affect his school work. This study revealed that the average density of persons per room in low-achievers' homes was 5 to 6, whereas it was 2 to 3 for high-achievers' homes. As regards the sharing of beds, it was found that 40 per cent of low-

achievers shared beds with 2 to 3 siblings whereas among high-achievers only 15 per cent shared beds with the same number of siblings.

It must also be noted that over-crowding and sharing of beds and amenities (toilets, baths, etc.) with neighbours go hand in hand with squalid conditions and concomitant health hazards which may sap a pupil's energy and concentration on his school work.

Family-Size

The non-significance of the difference between high and low-achievers on family-size implies that this variable, in the manner in which it has been defined in this study, has little or no effect on the scholastic achievement of secondary school pupils. This finding is at variance with studies done in the West (Floud, et al., 1956; Burt, 1961; Evans, 1962; Hill and Giammateo, 1963; Wiseman, 1964; Douglas, 1964; Swift, 1965; Fraser, 1968; Miller, 1970; and Dale and Griffiths, 1970), which found that the variable of family-size is of consequence in the scholastic achievement of pupils.

Western sociologists and psychologists contend that family-size affects the scholastic achievement of the child because parents with many children are unable to give enough attention to their individual children. They further contend that emotional satisfaction and psychological security which result from close contact between parents and children is

reduced in large families. However, this may not necessarily be the case in African societies. The extended family system and in particular multiple fathering and mothering (the practice whereby the child is given care by several people including the parents) ensures that the child is not either paternally or maternally deprived - thus he is not adversely affected where stimulation, emotional satisfaction and psychological security are concerned. In Africa, the child experiences a greater sense of satisfaction and security because he is cared and attended to by several persons. Adult company and guidance are readily available. On the other hand, the child in a small Western nuclear family is at a disadvantage because if faced by emotional and psychological problems in the family, he has no other adults to turn to but to his peer group friends who may be truants, drop-outs, or delinquents. The extended family, therefore, acts as a counterweight to problems that might befall a child whose parents are absent or too busy to attend to individual children. Therefore, the fact that an African child is born in a large family does not in any way affect his scholastic achievement -- thus the non-significance of the difference between high and low-achievers on this variable.

Birth-Order

The non-significance of the difference between high and low-achievers on birth-order implies that this variable is of little or no consequence on the scholastic achievement

of secondary school pupils. This finding concurs with Dave's (1963:93), American study which found no differences in performance among children of varying ordinal positions in the family. However, the finding is at variance with studies done in the West (Halsey and Garner, 1953; Lees and Stewart, 1957; Lynn, 1959; Douglas, 1964; and Dale and Griffiths, 1970), which show that birth-order affects the scholastic achievement of pupils.

It is argued that firstborn and only children surpass intermediates because parents are able to give more attention to one child than to several. The emotional satisfaction and psychological security of such children is also said to be enhanced because of the close contact the pupil has with his parents. The youngest child is also said to enjoy the same advantages.

However, in African societies, all children (whether firstborn, only, youngest or intermediates) may enjoy relatively equal amount of attention, emotional satisfaction and psychological security because of multiple fathering and mothering which is characteristic of the extended family.¹ Therefore, the ordinal position of a child in an African society may not affect his scholastic chances — thus the non-significance of the difference between high and low-achievers on birth-order.

Parental Attitudes towards Education, School and Teachers; and Parental Encouragement and Support afforded the child at home

This study found statistically significant differences between high and low-achievers on parental attitudes towards

1. See also discussion on family-size in the same chapter.

education, school and teachers and parental encouragement and support afforded the child at home. This shows that the two variables are factors of great importance in the scholastic achievement of secondary school pupils. Fitt (1956); Wiseman (1964); Wisenthal (1965); Pringle (1965); Swift (1965); Fraser (1968); and Evans (1976), all subscribe to the finding that parental attitudes towards education, etc. are of consequence in the scholastic achievement of pupils. Bhatnagar (1952); Griffiths (1958); Wall, Shonell and Willard (1962); Dave (1963); Douglas (1964); Bloom, Davis and Hess (1965); Pringle (1965); Musgrove (1966); Fraser (1962); and Miller (1970), have shown that parental educational support and encouragement has a bearing on the scholastic achievement of pupils.

The interest parents have in education and the encouragement and support they give to their children in their school work affect the academic motivation and the willingness the pupils have to embark on their learning tasks. A child who is strongly motivated is more likely to make good academic progress than one who is not. Such pupils get involved in learning tasks because their parents, as models, have demonstrated to them the importance of education by getting involved in pupil's school work.

Ego involvement is a necessary condition for learning to take place. For a pupil to learn, he must have the desire to engage in a learning activity. It is the duty of both parents and teachers to stimulate pupils' interest in school work. If pupils do not see the need or the significance of schooling, they will not concentrate on learning. Teachers and parents have a duty to help pupils associate schooling with good things in life so that they are able to work towards the fulfilment of such goals. It must be noted that pupils' interests and needs act as motivators to learning. If pupils do not have interest and do not see the need for school, they will not learn effectively.

Since the attitudes of parents and children towards education and school work are of prime importance in the scholastic achievement of pupils, the school system should deliberately cultivate positive attitudes if an improved educational harvest is to be attained.

Emotional Satisfaction enjoyed by the Child at Home

The finding of statistically significant differences between high and low-achievers on the emotional satisfaction of the child points to the fact that this variable is a potent factor in the scholastic achievement of secondary school pupils. Fraser (1968), in her Aberdeen study found that emotional stress, insecurity and anxiety are factors which effectively affect the child's school progress. This

finding also concurs with studies done by Bhatnagar, 1952; Lewis, 1952; Wall, Shonell and Willard, 1962; Evans, 1962; Douglas, 1964; Wiseman, 1964; Griffiths, 1965; Swift, 1966; and Miller, 1970.

Pupils with emotional problems do poorly in school because they are unable to turn their energies and attention in the direction of learning. Such children are dominated by more urgent unfulfilled psychological and emotional needs. Because of these unfulfilled needs, learning becomes less urgent and irrelevant. The child, instead of concentrating on his school work, directs his energy and attention brooding on how he will meet his most pressing needs. The affectionless child, for example, becomes extremely anxious for affection and attention from his parents and until this is achieved cannot concentrate on his school work. When emotional needs are not satisfied, there is a fertile ground for the development of learning problems, e.g. a child who lacks emotional satisfaction and psychological security may ultimately seek psychological sustenance and security outside the family — with peer groups of truants, drop-outs and delinquents who devalue schooling. The satisfaction of emotional needs is also a prerequisite to the development of an integrated personality (i.e. a person whose physical, mental, and emotional components are in harmony so that he has a satisfactory

personal and social adjustment). If this is absent, a defective and weak personality may ensue.

The importance of emotional satisfaction in the scholastic achievement of pupils places great responsibilities on the parents and teachers alike. It must be realized that if pupils are disgusted and dissatisfied with their emotional world, learning will not take place effectively. Therefore, parents and teachers must do all in their power to aid pupils' emotional adjustment. It is their duty to guide young ones so that they too can succeed in life. Parents and teachers must provide experiences which enhance a well integrated personality and they must be aware of vices, e.g. punishment which may lead to defective personality development and consequent poor school work.

In summary, this chapter has discussed the reasons for the significance or non-significance of the differences between high and low-achievers on the eleven variables investigated. The factors discussed in this chapter have a bearing on the pupils' will and ability to achieve because they may create conditions which are a help or hindrance to scholastic achievement. These factors are likely to expose the pupils to certain attitudes, values and aspiration levels. In addition, social stratification (whether based on education, income and wealth, occupation, etc.), exhibit marked differences in the material environment and styles of life which may effectively affect the scholastic achievement of pupils.

CHAPTER FIVE

CONCLUSIONS

Policy Implications of the Study

The main practical implication of this study lies in the need to supply pupils with experiences and opportunities in their cultural, material, motivational and emotional environments in order to level out the handicap created for the able pupil by the inadequacies of his family background. Measures must be taken to remove environmental barriers that prevent the development of scholastic ability and eventuate in poor scholastic performance. The society and its schools are therefore charged with the duties of providing remedial tasks which might compensate for and mitigate the effects of the deprivations suffered by children from impoverished home backgrounds.

However, it is important to keep in mind the fact that the main concern of this study was to establish the relationship between home background and scholastic achievement. As a case study, the present investigation has its own limitations (refer to relevant section in this chapter). In fact, more detailed studies are needed to authenticate the findings of the present research. This being the case, it would be beyond the scope of this monograph to offer a comprehensive picture of recommendations. Other investigations (feasibility or otherwise) are needed before implementing these recommendations. Despite these shortcomings, the author would like to take this opportunity to suggest some

areas where corrective measures are needed in order to combat the effects of impoverished home environments on secondary school pupils.

Long-term Recommendations

The researcher is aware of economic constraints in the development of Zambia. However, the following long-term recommendations can be denied consideration only at the disadvantage of the entire education system.

Since effective school learning is blocked by need deficits which the school alone cannot alleviate, the Government and other public agencies should organize measures to alleviate these deficiencies in both urban and rural areas. The following are a few areas which need consideration:

- a) Provision of good, but low-cost or subsidized housing
 ✓ that can be afforded by low-income families in which they can rear children in more congenial conditions.
- b) In view of the high prices of essential commodities, e.g. food stuffs, it is becoming increasingly difficult for parents in the low-income bracket to secure the basic needs of life. The Government ~~should~~ subsidize essential commodities if nutritional and general rearing levels are to be improved.
- c) Provision of health centres where these do not exist. Primary health care programmes should be organized to enlighten people about diseases and their prevention. This can be done through instructions offered by medical personnel manning health centres or mobile clinics and through the mass media.

- d) Recreational facilities, e.g. sports, clubs, films, parks, etc. should be provided. These will go a long way in enhancing children's physical and intellectual capacities.
- e) Libraries (mobile or otherwise) should be established where they do not exist. This measure can offer opportunities to children to enrich their school experiences.
- f) In some rural areas, villages are widely spaced. This makes it difficult for the Government and other public agencies to provide services to the people. Such villages should be re-grouped so that services, e.g. health centres, community halls, stores, schools, bore holes for water, etc. could be provided. There is also need to encourage self-help schemes both in urban and rural areas. Modest houses, for example, can be built on selfhelp schemes using baked bricks - with the Government or other agencies providing a few building materials.
- g). Since the values and behaviour of parents which impinge upon educational progress are amenable to change through the general process of education, the Government and other public agencies must establish means by which parents can be educated in the best way of child care so that pupils are adequately and effectively prepared for school tasks. Parents can be helped in providing good care and stimulating environments to their children through mediums such as parent-teacher associations,

publications for parents, radio, etc. and through primary health care programmes mentioned earlier.

Short - term Recommendations

1) Compensatory Education:

Later learning is influenced by the very basic learning which has taken place in the home. Since a child from an ~~impoverished~~ environment comes to school with deficits in learning skills, he cannot progress at the same pace and by the same approach as children from privileged environments. It is in the interest of the schools to mitigate the cumulative deficits of the children in order to make instruction and learning more effective. In order to bring the deprived child in the academic mainstream, special transitional techniques must be employed. In particular, compensatory or remedial education, may do much to alleviate inadequacies in the home backgrounds and enhance scholastic achievement.

✓ Compensatory education requires that the schools adapt curricular and teaching methods to children from different home backgrounds. Unless the teacher begins teaching from the known, learning cannot proceed in a fruitful and meaningful way. This implies that teachers must have sufficient knowledge about the home conditions of individual pupils. Indeed, if the attitudes of low-achievers are to be changed, their teachers need to have a better understanding of the difficulties the children are facing. Teachers will get a better understanding of their pupils if they are made to handle small classes and visit pupils' homes.

This will enable them to detect and look after pupils' learning handicaps.

In view of these facts, the author would like to recommend that:

- a) A major effort be made by the schools to designate, by the beginning of secondary education, those deprived pupils who need special treatment. This can be done in several ways: through diagnostic tests given by the beginning of secondary schooling; through information obtained from questionnaires and interviews on the home backgrounds of pupils; and reports on individual pupils written by primary school teachers.
- b) The Government should introduce compensatory education to those pupils who come to schools with learning deficits.

The researcher is, of course, aware of practical problems in the ^limplementation of compensatory education. It is not feasible with the present teaching force, teaching materials, etc., but it is a factor that can only be ignored at the peril of the education system and the society at large. This means that new teaching materials suited for the teaching of pupils with learning problems have to be procured. Secondly, teachers to conduct remedial classes have to be trained. Indeed, this involves a lot of money (which is hard to come by). The Lusaka College for Teachers of the Handicapped should be expanded with a view to training teachers of the handicapped up to secondary school level. And to complement this task,

teacher training colleges and the University of Zambia should introduce courses in compensatory education

The question of what form compensatory education should take is a debatable one. There are advantages and disadvantages in either mixed or separate classes. Compensatory education in mixed classes may not achieve its desired goals. This would, in fact, retard the pace of the privileged high-achievers and may not necessarily improve the learning capacities of deprived low -achievers. This problem can probably be solved by providing differential educational treatment for the deprived low-achievers, i.e. establishing separate classes where special teaching-learning approaches can be used. However, this system may have serious psychological repercussions on the deprived low-achievers who are put in separate classes. They may start seeing themselves inferior in the eyes of their friends, develop the feeling that they are naturally dull and are doomed to failure whatever effort they may put in their work. These feelings may have the effect of a self-fulfilling prophecy and may eventuate in student failure.

Since separate and mixed classes have their own advantages and disadvantages, the author would like to suggest a middle-of-the-road alternative. Both privileged high-achievers and deprived low-achievers could be taught in the same classes, but the low-achievers should be given compensatory education in terms of extra tuition.

2) Guidance and counselling:

Since a pupil at secondary school is beset by many problems which impinge on his school progress, there is need for an adequate system of guidance and counselling. In fact the need for guidance and counselling is of paramount importance at secondary school level since most pupils have by now attained adolescence. Adolescence pre^occupies the pupil with matters concerning his future role in society. The adolescent has to answer a lot of questions pertaining to his real self, the direction in which he is moving, how to achieve his objectives, etc. If the adolescent is given adequate guidance and counselling during this period, he may find his self-identity and niche in his particular society. However, if he is left to himself, he may get confused and may not be able to achieve his objectives in life. It is during adolescence also that the peer group becomes very important while the parents and other adults become less central. If such groups hold unfavourable attitudes towards school and society, an adolescent without guidance is likely to follow suit. Clearly, if the adolescent is to be properly prepared for adult roles, he must be advised on how to conduct himself both in and outside the school.

The present system of guidance through career masters in secondary schools is inadequate. This system fails in two ways. Firstly, career masters are charged with teaching responsibilities and are as such not able to tend satisfactorily to pupils' problems. At one of the schools visited, for example, the career master was also head of civics department

and had a teaching load of 23 periods in a week. Apart from causing fatigue due to over work, this leaves him with little or no time to help and counsel students. Secondly, this system does not take into account the broad duties involved in guidance and counselling, e.g. advising students on how best they can tackle their studies, helping them surmount emotional problems that may have sprung from the home or school environment, etc.

The present system of guidance in secondary schools should be complemented in the ways indicated below.

- ✓ a) Establishing departments of guidance and counselling in all secondary schools. It is worth noting that a resolution passed at a guidance and counselling workshop in Kitwe recently made the same recommendation.
- ✓ b) Employing officers solely responsible for guidance and counselling. These must have training in guidance and counselling, i.e. counselling psychology with focus on issues pertaining to the emotional, vocational, educational (e.g. study skills) and other practical problems faced by students. It is also worth noting here that the University of Zambia in conjunction with the Ministry of Education is considering plans for the training of guidance counsellors in the School of Education. This is a step in the right direction.

c) In addition, regular medical examinations among secondary school pupils must be conducted in order to detect student handicaps. These will go a long way in determining special needs of students who come to school with problems, e.g. fatigue, visual and aural difficulties, etc. Regular medical examinations can be done by employing the services of Government medical personnel.

3) Relationship between Home and School:

Since the home environment plays such an important part in scholastic achievement the interaction of the home and the school in shaping and guiding emotional, social and intellectual growth should be recognized. Every effort must be made to strengthen the relationship between the home and the school. Parents must be actively involved so that they can provide support and reinforcement for the learning tasks at school. Both teachers and parents must understand that the learning process of a child is a dual task involving home and school, that the two are not separate worlds but are complementary to each other.

In view of these facts, stronger relationships between the home and the school must be established. Teachers and parents must work in active practical partnership through parent-teacher associations, sports festivals, clubs, teachers' visits to pupils' homes, etc. Parents, for example, can be asked to become patrons of school clubs if they have time to spare. Such activities can provide opportunities for teachers and parents to appraise children's work.

Limitations of the Study

This study was conducted in only four secondary schools and its findings are based on relatively small number of pupils. Whereas 100 pairs of both girls and boys were chosen as subjects for this study, only 80 pairs could be used in the final analysis. This was a result of some sample pupils and parents not returning the questionnaires. In some cases, subjects did not complete all items of the questionnaires and yet in others the information supplied was unreliable and could not therefore be used. Since the group studied is far from being representative of Junior Secondary School pupils in Zambia, this study cannot claim having found results that can be applied to all Junior Secondary School pupils.

Suggestions for further Research

- 1) Although this study drew subjects from both residential (boarding) and non-residential secondary schools, it has not discussed the counterbalancing effect of the two types of schools on home background deficiencies. A study is needed to investigate the extent to which the two kinds of schools (individually) compensate for the deficiencies in the home background.

2) This study has established an association between home environment and scholastic achievement. The Chapter on discussion gives reasons for the significance and non-significance of the differences between high and low-achievers on the variables investigated. However, the study has not discussed the mode of operation of the various factors, i.e. how these factors work to bring about changes in the scholastic achievement of pupils. A detailed study on the mode of operation of home environment variables is necessary.

3) Although this study has found that the home environment plays a very important role in the scholastic achievement of pupils, its limitations must be noted. Because of the limitations of this study and the limited research work done in this field in Africa, similar researches are needed.

Similar work can go a long way to authenticate the findings of the present study. The present research concentrated on the Junior Secondary School level. Similar researches can be done at other educational levels, e.g. Grade I, Grade VII, Form V, etc. Related to the home environment are also peer group variables, e.g. attitudes of age-mates to schooling, teachers, etc. which might make an interesting study.

4) Apart from the home environment, there are a multitude of influences which affect the scholastic achievement of pupils. The school itself harbours some of these factors, e.g. teachers' incompetence, teachers' unfavourable attitudes towards students, teachers' low expectation with regard to

student performance, bad methods of teaching, lack of school facilities, etc. are educationally inhibiting factors which are worth investigating.

Conclusion

The finding of statistically significant differences between high- and low-achievers on 9 of the 11 variables investigated, implies that children from different environments respond differently to school, even at the same level of measured intelligence. The differences in performance may lie not in varying intelligence levels but in the disturbances or anomalies in the broad background against which the school carries out its educational tasks. This study has demonstrated that such anomalies have their impact on the powers of the child in so far as they affect the family's own quality as an educational institution. The fact that Group 2 pupils (with the same scholastic ability as Group 1 pupils) were surpassed by the latter in the Junior Secondary School Leaving Examinations indicates that factors other than intelligence were at work and that these have a strong influence on scholastic achievement. This also implies that the fact that a child is intelligent does not automatically predispose him to school success. To succeed, an intelligent pupil must have other qualities, e.g. attention, will, perseverance, industriousness, etc. A child, will learn little in class if he does not have qualities that aid the learning process.

The study also shows that although the school provides the machinery for learning, the mainspring comes from the home. Behind the failure of the child may often lie the failure of a home. Teachers and parents must become more discerning about the nature of the influence that the home environment exerts on the educational progress of pupils. They must realize that school education does not operate in a social vacuum. The school system should work hand in hand with the outside community in order to remedy deficiencies in the pupils' out-of-school environment which contribute to poor school work. The findings of this study are of great relevance to all those concerned with the education of children: parents, teachers, policy-makers and all those in the front-line of education. In Fraser's (1968:75) words, the findings are "a reminder that the child is part of an environment very much larger than that of the school, and that his school progress is vitally affected by the whole of that environment, by the attitudes which it encourages, by the motivation which it provides, and by the stability and security which he can derive from it."

Lastly, but not the least, a comment needs to be made on the various factors that impinge on scholastic achievement. The fact that 9 out of the 11 factors investigated proved to be influential in scholastic achievement is a clear indication that scholastic failure does not have

one cause, but a variety of interrelated causes. This plurality of causes of scholastic failure calls for a multi-pronged attack on the problems of educational failure. Although the school could be instrumental in reducing cases of failure, it cannot succeed singlehanded. Remedial action must be taken in the wider context within which the school operates, i.e. the society at large.

Summary

This research investigated the home background of 200 Zambian Junior Secondary School pupils between the ages of 15 and 19. These pupils entered Form I in 1976 after having done very well in their Grade VII Composite Examination (giving promise of good academic progress at secondary school), but after three years of secondary schooling showed variations in scholastic achievement. The Subjects were drawn from four secondary schools and were equally divided between high- and low-achievers (i.e. pupils with division I or II and division III or IV) and matched for ability and sex.

Two questionnaires (one for the pupils and the other for the parents) were prepared to tap the following aspects of the home environment: parental education; reading habits at home; parental income; parental occupation; housing conditions; over-crowding; family-size; birth-order; parental attitudes towards education, school and teachers; parental encouragement and support given to the pupil at home; and the emotional satisfaction enjoyed by

the pupil at home. It was found necessary to prepare a questionnaire for parents because pupils would not have been in the position to supply all the information that was required. Pupils' questionnaires were administered personally to those pupils who were still at school and through post to those who had left school. Parents' questionnaires were administered by post (at day schools through their pupils) and personally to those who were within easy reach.

The basic rationale for this study arose out of the realization that few studies relating to the effect of home background on scholastic achievement of pupils in Africa have been conducted. It was felt that though researchers in the West unanimously agree that home background variables have a bearing on scholastic achievement, the cultural differences between the West and Africa and the contradictory nature of results from a limited number of African studies cannot warrant application of these findings to all parts of Africa. Therefore, before generalizations are made, it was felt necessary that similar researches be conducted in as many parts of Africa as possible to ascertain the influence of the home background on scholastic achievement.

The study was also prompted by the unimpressive results at the Junior Secondary School level. These poor results viewed in the context of: a threat to social, political and economic stability due to unemployment; lack of middle-

level skilled educated manpower; and the large investments made in secondary education in a period of increasing financial stringency, formed the other rationale for this study. It was assumed that since students do very well at Grade VII level in order to qualify for secondary school but do poorly later, factors operating outside the classroom and particularly at home may be of greater importance at secondary school level. While transmission of skills and knowledge is extremely important at primary school level, at secondary school a pupil has not only to supplement what happens in the classroom by his private study at home but also needs constant encouragement and support from parents.

The main objective of the study was to determine whether there were significant variations on home background variables between pupils of comparable intellectual ability but differing scholastic achievement. In this way, it was hoped to identify the forces which make or mar educational promise at the Junior Secondary School level.

It was hypothesized that high-achievers would gain higher scores on scales designed to measure each of the eleven home background variables investigated than low-achievers.

The data obtained were subjected to the A-test statistical analysis (this test yields the same results as the t-test since the statistical formula has been derived from the t-ratio) to determine whether the differences between the two groups were statistically significant. This study

found statistically significant differences between high and low-achievers on all, except two variables. The two variables on which differences were not found statistically significant were family-size and birth-order. The study, therefore, found that of the 11 variables investigated, 9 were potent factors in the scholastic achievement of secondary school children.

The study recommended the following as measures to counteract the effect of impoverished home environments in order to enhance scholastic attainment at the Junior Secondary School level: social reform (as a long-term measure); compensatory education; guidance and counselling; closer relationships between home and school; identification of deprived pupils by the beginning of secondary education; and regular physical examinations among secondary school pupils (as short-term measures).

APPENDIX I
THE UNIVERSITY OF ZAMBIA
DEPARTMENT OF EDUCATION

THE HOME BACKGROUND OF 1978 JUNIOR SECONDARY SCHOOL CANDIDATES
QUESTIONNAIRE COVER LETTER

Dear parent(s),

Your son/daughter is among a few of the 1978 Junior Secondary School candidates chosen to complete a questionnaire relating to Home background. This questionnaire is part of a study being conducted in order to establish the relationship between the Home background of Junior Secondary School candidates and their performance in the Junior Secondary School Selection Examinations. The study is being conducted as part of a Master's Programme in Education under the auspices of the University of Zambia and the Ministry of Education.

You very well know that your son/daughter is not in a position to supply all the information needed for this study. Some information can only be supplied by you as parents. I am asking you, therefore, to spare some of your valuable time to complete this questionnaire. The findings of the study might help teachers and educators in improving the ability of students to learn.

The information you will give will be treated in strict confidence. Except for the researcher, no other person will know your answers. In fact, the questionnaire will be destroyed after the necessary information has been extracted.

Instructions on how to deal with each item of the questionnaire are given. In most cases, you are required to tick the right answers whereas in others you have to write the answer in the space provided. After answering all the questions that apply to you, send this questionnaire to the Researcher using the stamped addressed envelope provided.

May I take this opportunity to thank you in anticipation.

Godfrey Mwango Kapambwe,
Marshlands D. 26,
The University of Zambia,
P.O. Box 32379,
LUSAKA

PARENTS' QUESTIONNAIRE

1. Write your son's or daughter's name in the space below:

.....

2. Write the name of the school at which your child did his/her Form III.

.....

3. Mark with a tick the father's educational qualifications.

- () Never been to school.
- () Grade I - Grade IV or Sub A-standard II.
- () Grade V - Grade VII or Standard III - standard VI.
- () Form I - Form III.
- () Form IV - Form V or VI.
- () Post secondary diploma.
- () University degree.

4. Mark with a tick the mother's educational qualifications.

- () Never been to school.
- () Grade I - Grade IV or Sub A-standard II.
- () Grade V - Grade VII or standard II - Standard VI.
- () Form III.
- () Form IV - Form V or VI.
- () Post secondary diploma.
- () University degree.

5. Write the number of books that you have in your house.

.....

6. On the average, indicate with a tick how often parents or any other member of the family bought newspapers or magazines during the first three years that your child spent at secondary school.

- () Daily..... 7 times per week.
- () Often..... 5 - 6 times per week.
- () Quite often..... 3 - 4 times per week.
- () Sometimes..... 1 - 2 times per week.
- () Never.

7. On the average, indicate how often father read books during the first three years that the child spent at secondary school.

- () More often..... 7 times per week.
- () Often..... 5 - 6 times per week.
- () Quite often..... 3 - 4 times per week.
- () Sometimes..... 1 - 2 times per week.
- () Never.

8. On the average, indicate how often father read newspapers or magazines during the first three years that the child spent at secondary school.

- () **More** often 7 times per week.
- () Often 5 - 6 times per week.
- () Quite often 3 - 4 times per week
- () Sometimes..... 1 - 2 times per week.
- () Never.

9. On the average, indicate how often mother read books during the first three years that the son or daughter spent at secondary school.
- ☐ More often.....7 times per week.
 - ☐ Often.....5 - 6 times per week.
 - ☐ Quite often.....3 - 4 times per week.
 - ☐ Sometimes.....1 - 2 times per week.
 - ☐ Never.
10. On the average, indicate how often mother read newspapers or magazines during the first three years that the son or daughter spent at secondary school.
- ☐ More often.....7 times per week.
 - ☐ Often.....5 - 6 times per week.
 - ☐ Quite Often.....3 - 4 times per week.
 - ☐ Sometimes.....1 - 2 times per week.
 - ☐ Never.
11. On the average, indicate how often any other member of the family, e.g. brother, sister, cousin, etc. read books during the first three years that the son or daughter spent at secondary school.
- ☐ More often..... 7 times per week.
 - ☐ Often..... 5 - 6 times per week.
 - ☐ Quite often..... 3 - 4 times per week.
 - ☐ Sometimes..... 1 - 2 times per week.
 - ☐ Never.

12. On the average, indicate with a tick how often any other member of the family read newspapers or magazines during the first three years that the son or daughter spent at secondary school

() More often.....7times per week.
 () Often.....5 - 6 times per week.
 () Quite often.....3 - 4 times per week.
 () Sometimes.....1 - 2 times per week.
 () Never.

- 13 Was father member of a library during the three years that the son or daughter spent at secondary school?

() Yes () No.

14. Was mother member of a library during the three years that the son or daughter spent at secondary school?

() Yes () No.

15. Did father own business, e.g. farm, store, etc. during the three years that the son or daughter spent at secondary school?

() Yes () No.

16. If the answer to No. 15 above is "Yes", write in the space below the business owned by the father:

.....

17. Did mother own business, e.g. farm, store, etc. during the three years that the son or daughter spent at secondary school ?

() Yes () No.

18. If the answer to No. 17 above is "Yes", write in the space below the business owned by the mother:

19. If father was employed or owned business during the three years that the son or daughter spent at secondary school, write his income per month in the space below:
 K.....per month from employment.
 K.....per month from business.
20. What was father's occupation or work during the three years that the son or daughter spent at secondary school?

21. What was mother's occupation or work during the three years that the son or daughter spent at secondary school?

22. Indicate the income(s) per month of other members of the family, e.g. mother, brother, cousin, etc. who stayed with you and contributed towards the maintenance of the household during the three years that the son or daughter spent at secondary school.
 Mother's income.....per month.
 Brother's income.....per month.
 Sister's income.....per month.
 Othersper month.

23. What educational qualification did father wish son or daughter to attain?

- ☐ Form III only.
- ☐ Form V.
- ☐ Post Secondary diploma.
- ☐ University degree.

24. What educational qualification did mother wish son or daughter to attain?

- ☐ Form III only.
- ☐ Form V.
- ☐ Post secondary diploma.
- ☐ University degree.

25. What occupation or job did father have in mind for son or daughter?

.....

26. What is the educational qualification and/or the number of years in training required for the job the father had in mind for the son or daughter.

- ☐ Degree - four - five years training after Form V.
- ☐ Diploma - two - three years training after Form V.
- ☐ Form V and one year training.
- ☐ Form III and one or two years training.
- ☐ Form III without training.

27. What occupation or job did mother have in mind for son or daughter?

.....

28. What is the educational qualification and/or the number of years in training required for the job the mother had in mind for the son or daughter?
- () Degree - four - five years training after Form V.
- () Diploma - two - three years training after Form V.
- () Form V and one year training.
- () Form III and one or two years training.
- () Form III without training.
29. Did father wish son or daughter to go for training after Form III or continue with schooling?
- () Yes. () No.
30. Did mother wish son or daughter to go for training after Form III or continue with schooling?
- () Yes () No.
31. On the average, how often did father visit or write the school to inquire about the child's school work during the three years he or she spent at secondary school?
- () More often.....7 (plus) times per term.
- () Often.....5 - 6 times per term.
- () Quite often.....3 - 4 times per term.
- () Sometimes.....1 - 2 times per term.
- () Never.
32. On the average, how often did mother visit or write the school to inquire about the child's school work during the three years he or she spent at secondary school?

- ☐ More often.....7 (plus) times per term.
- ☐ Often.....5 - 6 times per term.
- ☐ Quite often.....3 - 4 times per term
- ☐ Sometimes.....1 - 2 times per term.
- ☐ Never.

33. On the average, indicate with a tick how often your son or daughter was admitted to hospital during the three years he or she spent at secondary school.

- ☐ More often.....7 (plus) times per term.
- ☐ Often.....5 - 6 times per term.
- ☐ Quite often.....3 - 4 times per term.
- ☐ Sometimes.....1 - 2 times per term.
- ☐ Never.

34. On the average, indicate how often the father was admitted to hospital during the three years the son or daughter spent at secondary school.

- ☐ More often.....7 (plus) times per year.
- ☐ Often.....5 - 6 times per year.
- ☐ Quite often.....3 - 4 times per year.
- ☐ Sometimes1 - 2 times per year.
- ☐ Never.

35. On the average, indicate how often the mother was admitted to hospital during the three years the son or daughter spent at secondary school.

- ☐ More often.....7 (plus) times per year.
- ☐ Often.....5 - 6 times per year.
- ☐ Quite often.....3 - 4 times per year.
- ☐ Sometimes.....1 - 2 times per year.
- ☐ Never.

36. How often did father discuss educational matters with the son or daughter during the three years that he or she spent at secondary school.
- () More often 7 (plus) times per month.
 - () Often..... 5 - 6 times per month.
 - () Quite often..... 3 - 4 times per month.
 - () Sometimes..... 1 - 2 times per month.
 - () Never.
37. How often did mother discuss educational matters with the son or daughter during the three years that the son or daughter spent at secondary school.
- () More often..... 7 (plus) times per month.
 - () Often..... 5 - 6 times per month.
 - () Quite often 3 - 4 times per month.
 - () Sometimes..... 1 - 2 times per month.
 - () Never.
38. On the average, how often would you say your child was unhappy as a member of your family during the three years he or she spent at secondary school.
- () More often..... 7 (plus) times per month.
 - () Often..... 5 - 6 times per month.
 - () Quite often..... 3 - 4 times per month.
 - () Sometimes..... 1 - 2 times per month.
 - () Never.

THANK YOU.

APPENDIX II
THE UNIVERSITY OF ZAMBIA
DEPARTMENT OF EDUCATION

THE HOME BACKGROUND OF 1978 JUNIOR SECONDARY SCHOOL CANDIDATES
QUESTIONNAIRE COVER LETTER

Dear.....,

You are among a few of the 1978 Junior Secondary School candidates chosen to complete this questionnaire relating to your Home background. This questionnaire is part of a study being conducted to establish the relationship between the Home background of Junior Secondary School candidates and their performance in the Junior Secondary School Selection Examinations. The study is being conducted as part of a Master's Programme in Education under the auspices of the University of Zambia and the Ministry of Education.

The findings of this study might help teachers and **educators** in improving the ability of students to learn. I am asking you, therefore, to spare some of your valuable time to complete this questionnaire. The information you will give will be treated in strict confidence. Except for the Researcher, no other person will know your answers. In fact, the questionnaire will be destroyed after the necessary information has been extracted.

Instructions on how to deal with each item of the questionnaire are given. In most cases, you are required to tick the right answers whereas in others you have to write the answer in the space provided. After answering all the questions that apply to you, send this questionnaire to the Researcher using the stamped addressed envelope provided. Your parents' questionnaire must also be enclosed in the same envelope.

May I take this opportunity to thank you in anticipation.

Godfrey Mwango Kapambwe,
Marshlands D. 26,
The University of Zambia,
P.O. Box 32379,
LUSAKA

STUDENTS' QUESTIONNAIRE

1. Write your full name in the space below:
.....
2. Write the name^{of the school} at which you did your Form III in the space below:
.....
3. Indicate your sex with a tick.
☐ Male. ☐ Female.
4. How old were you when you wrote your Form III Examinations?
.....
5. What division did you obtain at Form III level?.....
6. On the average, indicate with a tick how often you read books (other than school texts) during your first three years at secondary school.
☐ More often.....7 times per week.
☐ Often.....5 - 6 times per week.
☐ Quite often.....3 - 4 times per week.
☐ Sometimes.....1 - 2 times per week.
☐ Never.
7. On the average, indicate how often you read newspapers or magazines during your three years at secondary school.
☐ More often.....7 times per week.
☐ Often.....5 - 6 times per week.
☐ Quite often.....3 - 4 times per week.
☐ Sometimes.....1 - 2 times per week.
☐ Never.

8. Indicate with a tick all items found in your house during your three years at secondary school among the following:

<input type="checkbox"/> Sewing machine.	<input type="checkbox"/> Bicycle.
<input type="checkbox"/> Television set.	<input type="checkbox"/> Motor-cycle.
<input type="checkbox"/> Radio/radio gram.	<input type="checkbox"/> Clock/watch.
<input type="checkbox"/> Tape recorder.	<input type="checkbox"/> Calendar
<input type="checkbox"/> Record player.	<input type="checkbox"/> Toys
<input type="checkbox"/> Car.	<input type="checkbox"/> Chairs
<input type="checkbox"/> Pressing iron.	<input type="checkbox"/> Tables
<input type="checkbox"/> Beds.	<input type="checkbox"/> Fridge
<input type="checkbox"/> Washing machine	<input type="checkbox"/> Lantern
<input type="checkbox"/> Electric cooker	<input type="checkbox"/> Primus stove.

9. Write in the space below any other items not mentioned in No. 8 above:

.....
:.....

10. Did you ever go outside Zambia during your first three years at secondary school?

☐ Yes. ☐ No.

11. If the answer to No. 10 above is "Yes", write the number of times that you went outside Zambia during the three years you spent at secondary school

.....

12. How often did you visit other districts or provinces during school holidays from the time you entered Form I till you wrote your Form III examinations.

- () More often..... 7 (plus) times per month.
- () Often..... 5 - 6 times per month.
- () Quite often..... 3 - 4 times per month.
- () Sometimes..... 1 - 2 times per month.
- () Never.
13. State your family position in the space below, i.e.
whether you are firstborn, secondborn, thirdborn, fourth
bornlastborn.
.....
14. Were you the only child in the family during the three
years that you spent at secondary school?
() Yes () No.
15. If the answer to No. 14 above is "No", write in the
space below how many boys and girls (including yourself)
were in your family during your three years at secondary
school.
.....Boys.Girls.
16. How many people all together stayed in your house
during the three years you were at secondary school?
(relatives, e.g. cousins, aunts, uncles, grandparents,
etc. included).
.....
17. Write in the spaces below the number of rooms you had
of each of the following during the first three years
you spent at secondary school.
.....Bedroom(s).
.....Bathroom(s).
.....Bathroom combined
with toilet.

.....Toilet(s).

.....Kitchen.

.....Sitting room/living room.

.....Dining room.

.....Study room(s).

18. Indicate with a tick all the facilities which were found in your house during the first three years of your secondary education among the following:

() Running water.

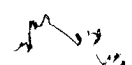
() Electricity.

() Bathroom.

() Toilet.

19. Did you share toilets or baths with neighbours during the three years you were at secondary school?

() Yes.

() No. 

20. Did you sleep alone, i.e. had your own bed during your first three years of secondary education?

() Yes.

() No.

21. If the answer to No. 20 above is "No", indicate the number of brothers, sisters, etc. you shared the bed with:

.....

22. Did you have a place or room where you could study or do school work at home during the first three years you spent at secondary school?

() Yes.

() No.

23. On the average, how often did your parents ~~give~~ you presents for good work done during your first three Years at secondary school?
- () Frequently, i.e. every time I did something good at school.
- () Rarely, i.e. some times (not often).
- () I was never given presents, etc. when I did something good at school.
24. On the average, how often did you discuss educational matters with your parents during your first three years at secondary school?
- () More often.....7 (plus) times per month.
- () Often.....5 - 6 times per month.
- () Quite often.....3 - 4 times per month.
- () Sometimes.....1 - 2 times per month.
- () Never.
25. If you attended a day school, indicate on the average how often your father encouraged or helped you to do school work during the first three years you spent at secondary school.
- () More often.....7 times per week.
- () Often.....5 - 6 times per week.
- () Quite often.....3 - 4 times per week.
- () Sometimes.....1 - 2 times per week.
- () Never.

26. If you attended a day school, indicate on the average how often your mother encouraged or helped you with school work during the first three years you spent at secondary school.

- ☐ More often..... 7 times per week.
- ☐ Often..... 5 - 6 times per week.
- ☐ Quite often..... 3 - 4 times per week.
- ☐ Sometimes..... 1 - 2 times per week.
- ☐ Never.

27. If you attended a boarding school, indicate on the average how often your father encouraged or helped you with school work during holidays from Form I up to the time you wrote your Form III examinations.

- ☐ More often..... 7 times per week.
- ☐ Often..... 5 - 6 times per week.
- ☐ Quite often..... 3 - 4 times per week.
- ☐ Sometimes..... 1 - 2 times per week.
- ☐ Never.

28. If you attended a boarding school, indicate on the average how often your mother encouraged or helped you with school work during holidays from Form I up to the time you wrote your Form III examinations.

- ☐ More often..... 7 times per week.
- ☐ Often..... 5 - 6 times per week.
- ☐ Quite often..... 3 - 4 times per week.
- ☐ Sometimes..... 1 - 2 times per week.
- ☐ Never.

29. If you attended a day school, indicate on the average how often you helped with household duties, e.g. running errands, cooking, sweeping, nursing your brothers and sisters, etc. during your first three years at secondary school.

- ☐ More often..... 7 times per week.
- ☐ Often..... 5 - 6 times per week.
- ☐ Quite often..... 3 - 4 times per week.
- ☐ Sometimes..... 1 - 2 times per week.
- ☐ Never.

30. If you attended a boarding school, indicate on the average how often you helped with household duties, e.g. running errands, cooking, sweeping, nursing your brothers and sisters, etc. during your holidays from Form I up to the time you wrote your Form III examinations.

- ☐ More often..... 7 times per week.
- ☐ Often..... 5 - 6 times per week.
- ☐ Quite often..... 3 - 4 times per week.
- ☐ Sometimes..... 1 - 2 times per week.
- ☐ Never.

31. How often were you in hospital during the first three years you spent at secondary school?

- ☐ More often..... 7 (Plus) times per term.
- ☐ Often..... 5 - 6 times per term.
- ☐ Quite often..... 3 - 4 times per term
- ☐ Sometimes..... 1 - 2 times per term.
- ☐ Never.

32. Were both your parents still alive by the time you wrote your Form III examinations?

() Yes.

() No.

33. If the answer to No. 32 above is "No", indicate whether it was the father or mother who died in the space below:

.....

Did your parents divorce or separate by the time you wrote your Form III examinations?

() Yes.

() No.

35. How often were you free to discuss your problems with your mother during the three years you spent at secondary school?

() More often..... 7 times per week.

() Often..... 5 to 6 times per week.

() Quite often..... 3 - 4 times per week.

() Sometimes..... 1 - 2 times per week.

() Never.

36. How often were you free to discuss your problems with your father during the three years you spent at secondary school?

() More often..... 7 times per week.

() Often..... 5 - 6 times per week.

() Quite often..... 3 - 4 times per week.

() Sometimes..... 1 - 2 times per week.

() Never.

37. On the average, how often did your father punish you during your three years at secondary school?

- ☐ More often..... 7 times per week.
- ☐ Often..... 5 - 6 times per week.
- ☐ Quite often..... 3 - 4 times per week.
- ☐ Sometimes 1 - 2 times per week.
- ☐ Never.

38. If punished, what is the most frequent form of punishment you received from your father?

.....

39. On the average, how often did your mother punish you during your three years at secondary school?

- ☐ More often..... 7 times per week.
- ☐ Often..... 5 - 6 times per week.
- ☐ Quite often..... 3 - 4 times per week.
- ☐ Sometimes..... 1 - 2 times per week.
- ☐ Never.

40. If punished, what is the most frequent form of punishment you received from your mother?

.....

41. How often did your father talk good of school and your teachers during the three years you spent at secondary school?

- ☐ Frequently, i.e. every time he discussed educational matters.
- ☐ Rarely, i.e. once in a while when he discussed educational matters.

() Never talked good of school or teachers every time he discussed educational matters.

42. How often did your mother talk good of school and your teachers during the three years you spent at secondary school?

() Frequently, i.e. every time she discussed educational matters.

() Rarely, i.e. once in a while when she discussed educational matters.

() Never talked good of _____ school or teachers every time she discussed educational matters.

43. How often did your father encourage you to continue with your education during the three years you spent at secondary school?

() Frequently, i.e. everytime he discussed educational matters with me.

() Rarely, i.e. once in a while when he discussed educational matters with me.

() Never encouraged me to continue with my schooling.

44. How often did your mother encourage you to continue with your education during the three years you spent at secondary school?

- () Frequently, i.e. everytime she discussed educational matters with me.
- () Rarely, i.e. once in a while when she discussed educational matters with me.
- () Never encouraged me to continue with my schooling.
45. Was your father married to more than one wife during the three years you spent at secondary school?
- () Yes () No.
46. On the average, how often would you say you were unhappy as a member of your family during the three years you spent at secondary school.
- () More often..... 7 times per week.
- () Often..... 5 - 6 times per week.
- () Often..... 5 - 6 times per week.
- () Quite often..... 3 - 4 times per week.
- () Sometimes..... 1 - 2 times per week.
- () Never.
47. On the average, how often would you say your father and mother were happy together as husband and wife during the first three years that you spent at secondary school?
- () More Often..... 7 times per week.
- () Often 5 - 6 times per week.
- () Quite often..... 3 - 4 times per week.
- () Sometimes..... 1 - 2 times per week.
- () Never.

THANK YOU.

APPENDIX III

CLASSIFICATION OF SUCCESSFUL CANDIDATES FOR THE J.S.S.L.E.

- (a) First Division Certificate will be awarded to candidates who (i) pass in Six or more subjects, which must include at least a Grade II pass in English; at least a Grade III pass in a Mathematical Subject; ~~at least~~ Grade III pass in a Science Subject and passes in at least three other subjects and (ii) obtain a total of 12 points or less from the the best six Grades, including English.
- (b) Second Division Certificate will be awarded to candidates who (i) pass in English and at least Five other subjects and (ii) obtain a total of not more than 18 points from the best six Grades, including English.
- (c) Third Division certificate will be awarded to candidates who (i) pass in English and in at least Five other subjects (ii) pass in at least three subjects from Set A and not more than three subjects from Set B.

The subjects in Set A will be: Geography, History, Mathematics I, Mathematics II, General Science, Agricultural Science, Health Science, Civics, Religious Education. The subjects in Set B will be: Bemba, Lozi, Tonga, Woodwork, Book-Keeping, Office Practice, Typewriting, Arts and Crafts, Technical Drawing and Homecraft, Metal Work, French, Latin.

GRADING OF SUBJECT PASSES AND ALLOCATION OF POINTS TO PASS GRADES

Grade I (75% and above)	- Distinction	- 1 point
Grade II (60% - 74%)	- Credit	- 2 points
Grade III(50% - 59%)	- Good pass	- 3 points
Grade IV (40% - 49%)	- Pass	- 4 points

N.B. In 1971 a 4th division certificate was also awarded. It was awarded to all candidates who passed in one or more subjects but failed to qualify for a division 1,2,3 certificate.

Extract from: Government of the Republic of Zambia. 1976.

Psychological Services Report I. Lusaka: Ministry of Education.

N.B. There is no page number but this extract is Appendix II in the Report cited.

APPENDIX IV

SUMMARY OF RESEARCHES INTO THE PREDICTIVE VALUE OF GRADE VII EXAMINATIONS

YEAR OF GRADE 7	1964	1967	1968	1972
STUDY	MING 1973a	PSYCHO. SERVICE 1971	MING 1973b	SHARMA 1974
SAMPLE NO.	700	647	94	743
ENGLISH	.17	.33	.34	.53
MATHS	.24	.32	.27	.24
SOCIAL STUDIES	-	-	-	.13
SCIENCE	-	-	-	.14
SPECIAL PAPER I	-	.32	.38	.73
SPECIAL PAPER II	.31(SPIa) .17(SPIb)	.23	.34	.38
TOTAL	.20	.39	-	.72

N.B.

1. The criterion in the 1973a and the 1971 studies was the Form II Junior Secondary School Leaving Certificate. For the 1973b study it was the Form III J.S.S.L.C. and for the 1974 study it was a special constructed examination in English, Mathematics and Science administered early in Form II.
2. 1964 Special Paper (SP I) was of the matrices type and thus similar to the present Special Paper II (SP II). Special Paper Ib was a test of spacial ability and not used for selection.
Extract from: Ming, E.M. 1976. 'Teacher Estimates of Performance in the Grade VII Composite Examinations - A Pilot Study', Psychological Service Report 1, P. 15.

APPENDIX V

JUNIOR SECONDARY SCHOOL LEAVING EXAMINATION RESULTS

<u>YEAR</u>	<u>NO. ENTERED</u>	<u>FULL CERTIFICATE</u>	<u>FAILURE%</u>
1964	2,770	1,958	30
1965	3,240	2,256	31
1966	6,086	4,296	30
1967	10,909	6,189	44
1968	15,290	6,640	57
1969	13,987	8,237	42
1970	14,697	8,913	40
1971	9,605	9,341	3
1972	13,923	7,832	44
1973	14,644	9,111	38

Full certificate in this case meant Division I, II, III and IV. Comparing the figures for 1971 quoted above and those found in the "Ministry of Education Annual Report" for 1971, the percentage of failures if one took division I, II, III and IV as full certificates is 3 per cent whereas it is 38 per cent if division I, II and III were taken as full certificates. This means that if division I, II and III were the only divisions considered as passes, the percentage of failures would be higher for each year.

Extract from: Government of the Republic of Zambia. 1971
Ministry of Education Statistical Year Books. Lusaka:
Ministry of Education, P. 29.

Figures for 1972 and 1973 were extracted from respective Annual Reports of the Ministry of Education.

APPENDIX VI

ATTRITION RATES 1964 - 1976

BOYS AND GIRLS

<u>YEAR</u>	<u>FORM I</u>	<u>%</u>	<u>FORM II</u>	<u>%</u>	<u>FORM III</u>	<u>%</u>	<u>FORM IV</u>
1964	4,693	4.3	4,078	41.5	2,176	19.4	1,720
1965	6,601	4.2	4,496	30.0	2,855	18.2	1,754
1966	10,967	2.2	6,327	32.8	3,128	17.0	2,334
1967	14,963	1.0	10,727	35.7	4,253	19.6	2,595
1968	14,869	2.0	14,818	42.8	6,896	9.8	3,660
1969	15,721	2.0	14,571	41.3	8,469	8.0	6,141
1970	15,175	1.6	15,418	35.5	8,578	8.0	7,792
1971	15,753	2.1	15,411	4.3	9,937	30.7	7,894
1972	15,747	2.3	15,423	2.5	14,743	53.0	6,883
1973	17,570	2.0	15,383	1.4	15,032	49.6	6,933
1974	19,254	1.0	17,210	1.0	15,173	46.3	7,581
1975	21,462	0.9	19,060	1.0	17,041	48.1	8,145
1976	22,113	2.1	21,263		18,867		8,838

N.B. The progression of cohorts follow diagonal lines.

The intervening percentage refer to drop-out rate.

Extract from: Government of the Republic of Zambia. 1978.

Educational Statistics. Lusaka: Ministry of Education,

P. 67.

APENDIX VII

STANDARD SCORES OBTAINED BY SUBJECTS ON VERBAL REASONING
INTELLIGENCE TEST

DIV. I AND II BOYS

<u>NO.</u>	
1.	109
2.	107
3.	95
4.	93
5.	99
6.	100
7.	108
8.	102
9.	103
10.	109
11.	107
12.	114
13.	109
14.	118
15.	103
16.	109
17.	102
18.	104
19.	104
20.	86
21.	105
22.	93
23.	108
24.	126
25.	96
26.	102
27.	105
28.	97
29.	104
30.	115

DIV. III AND IV BOYS

<u>NO.</u>	
1.	109
2.	107
3.	95
4.	93
5.	99
6.	101
7.	108
8.	102
9.	103
10.	109
11.	104
12.	114
13.	109
14.	118
15.	103
16.	109
17.	102
18.	104
19.	104
20.	89
21.	105
22.	93
23.	108
24.	126
25.	96
26.	102
27.	105
28.	97
29.	104
30.	115

DIV. I AND II BOYS

No.	
31.	115
32.	115
33.	123
34.	105
35.	127
36.	118
37.	120
38.	112
39.	113
40.	115
41.	106
42.	112
43.	120
44.	122
45.	109
46.	107
47.	123
48.	131
49.	103
50.	112

DIV. I AND II GIRLS

51.	111
52.	109
53.	120
54.	122
55.	115
56.	112
57.	113

DIV. III AND IV BOYS

No.	
31.	115
32.	115
33.	123
34.	102
35.	127
36.	118
37.	120
38.	112
39.	113
40.	115
41.	106
42.	112
43.	120
44.	122
45.	109
46.	107
47.	120
48.	131
49.	100
50.	112

DIV. III AND IV GIRLS

51.	110
52.	109
53.	122
54.	122
55.	115
56.	112
57.	113



DIV. I AND II GIRLS

58.	115
59.	118
60.	107
61.	108
62.	126
63.	106
64.	99
65.	120
66.	102
67.	115
68.	102
69.	131
70.	101
71.	105
72.	105
73.	115
74.	115
75.	111
76.	123
77.	115
78.	113
79.	96
80.	117
81.	109
82.	113
83.	109
84.	105
85.	92
86.	102
87.	118
88.	111

DIV. III AND IV GIRLS

58.	115
59.	120
60.	107
61.	108
62.	126
63.	108
64.	99
65.	120
66.	102
67.	115
68.	102
69.	131
70.	101
71.	105
72.	105
73.	114
74.	115
75.	111
76.	123
77.	115
78.	113
79.	97
80.	117
81.	109
82.	113
83.	109
84.	105
85.	92
86.	102
87.	118
88.	111

DIV. I & II GIRLS

89.	109
90.	104
91.	106
92.	99
93.	101
94.	112
95.	104
96.	123
97.	115
98.	108
99.	117
100.	100

DIV. III AND IV GIRLS

89.	109
90.	104
91.	105
92.	98
93.	101
94.	112
95.	104
96.	123
97.	115
98.	108
99.	119
100.	100

N.B.

N. for Div. I and II Boys and Girls = 100

$$\text{Mean} = \frac{10964}{100} = 109$$

N. for Div. III and IV Boys and Girls = 100

$$\text{Mean} = \frac{10962}{100} = 109$$

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