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A Study of some non Intellectual Factors Associated

A study of some Non - Intellectual Factors Associated with Academic Achievement

F. S. NILES

Since nowhere in the world has it been possible to show a one-to-one correspondence between input and output in educational attainment, there has been a growing concern among politicians and educationalists alike, to identify and label the causes of unequal achievement in school and in the labour market. In socialist countries especially, this can become a potentially explosive issue, but although successive governments have proclaimed a policy of providing equality of educational opportunity for all, they are confounded by so many apparently inexplicable factors which nullify their efforts. Research in many countries has been gathering momentum and from admitting somewhat generally (Alexander 1935) that one component of school attainment was "something in the nature of industriousness which affects all school work" and referring largely to intellectual factors, we have now a wealth of evidence ranging from factors associated with socio-economic status and home background to the not so readily defined and complex constructs like ambition, values, motivation, etc., which are all found to influence differential achievement.

In Sri Lanka although no serious empirical work was undertaken this has proved a vexing question and has had the attention of every Minister of Education. Several measures were undertaken to make this system of education equally available to all. Free education for all, even at the University, was introduced as early as 1945 and this was followed by several progressive measures, such as the change in the medium of instruction to the national languages, the creation of the Central school system (to provide at least one well-equipped school in each school district) a system of scholarships which gave the gifted child from the poor home the opportunity to study in any school of his choice, the take-over by the State of all religiously affiliated schools to ensure a uniform system of education throughout the country, and more recently far reaching changes in the Curriculum and the Examination system and free books for all school children. The annual expenditure by the state on education in Sri Lanka is very high, nearly 5% of her GNP (which compares very well with expenditure on education in many developed countries), but even today we cannot claim that there is equality of educational opportunity and more importantly an equal chance for success for all in Sri Lanka.

Most of the research into the status attainment process stress the importance of the individual's socio-economic background and research in many countries abroad, namely U.S.A., U.K., Sweden, Canada and Australia, especially in their earlier studies, have found the evidence to support this. Socio-economic status (SES) is usually taken as a composite measure of parental occupation, education and income but it is often taken to include measures of material possessions of the family too. Correlations between these factors of SES severally and together with scholastic attainment indicate an undeniable relationship between them.

Research evidence has substantiated the belief that poverty has a stultifying effect in any achievement situation. Evidence in support of this has been gathered over a long period of time and is indeed formidable. Even as early as the first quarter of this century this problem generated research interest and the conclusions made have been for the most part consistent. For example Lindsay (1926) wrote that "it has been conclusively proved that success in winning scholarships varies with almost monotonous regularity according to the quality of the social and economic environment" Although somewhat overstated this is generally typical of the kind of belief that is widely accepted. About the same time in America too similar evidence was gathered (Chauncey 1929). This does not mean that there was no contradictory evidence (e.g.: Crawford 1929 and French 1959) but by and large sifting through all the available data we could conclude that a relationship between SES and achievement, either in school or occupationally, does exist. But the important point is that the mere fact of a relationship explains very little. Especially in the more affluent countries where economic differentiation is not as pronounced as in a country like Sri Lanka, research evidence like that of Floud, Halsey and Martin (1957) seems to point to the conclusion that where material differences are not great, the kind of family background especially the kind of support given and the richness of experiences, and attitudes towards educational matters were important determinants of academic achievement. What seems evident therefore is that a family background variable, not by any means synonymous with SES, is an important determinant of achievement. Pidgeon (1959) reviewing work done by the National Foundation for Educational Research (N.F.E.R.) in England claimed that "the most important factor bearing on educational progress of all those so far investigated was the attitude of the child's parents". In the Fraser (1959) study too, one of two highest correlations with educational attainment was parental encouragement in studies. Toomey (1974) reviewing several research studies writes that the process of socialization within the family "influences a child's educational oppor-

tunities to an important extent independently of differences of income and material conditions" and that SES is "a relatively poor predictor of children's scholastic attainments compared with the more sensitive and detailed examinations of children's home and backgrounds", and Sugarman (1966) writes that 'social class' is just a shorthand way of referring to a complex of factors which correlate with occupation".

We see therefore the development of two main 'theories' concerning differential achievement. One upholds the view that SES alone is only a poor indicator of attainment and that meaningful answers can be sought only through consideration of the more subtle forces that operate in respect of different homes and backgrounds, though they are undeniably linked to SES. The second tends to support the view that the appropriate attitudes and values are essential for success. And many argue that these are linked to subcultures within a society, with social class a significant subcultural influence.

The 'culture of poverty' idea formulated by Oscar Lewis (1968) and others, that differences between the different socio-economic levels is not merely one of material conditions but of differences in value orientations, also provides a strong argument for linking the two theories together. It argues that the poor experienced a feeling of powerlessness, which affects their capacity to act effectively in life's situations, especially when the situation is highly competitive. This is mirrored to some extent in their value orientations and there are now several studies which attempt to relate 'values' to scholastic attainment. Most of this research take as its basis the Kluckhohn and Strodtbeck (1961) classification of common human problems to which a limited number of solutions are available. They attempt to assess the capacity of individuals or groups of people to feel in control of their environment and have 'modernistic' values. Generally it was found that higher scholastic attainment goes with the belief that the environment can be mastered by human effort—the so called values of 'Activism' or 'Mastery', and with the related value of 'Individualism' which stresses individual as against collective responsibility (Sugarman, 1966, Rosen, 1959, Strodtbeck, 1961, Jayasuriya, 1960). The question that arises from these studies which has generated some debate is whether these values are related to 'class' differences. Most studies report only weak correlation between SES and values, while the relationship between values and scholastic attainment seems stronger (Sugarman, 1966, Musgrave and Reid 1969) This may be explained by hypothesizing that values are the product of several influences of which socio-economic status is only one. Although Craft (1970) argues that social-class differences over-ride most

other subcultural patterns, he accepts that the usual two-level model of class differentiation is often inadequate to explain differences and that there is much variation within classes.

The massive Coleman study (1966) gave a tremendous boost to this line of thinking by affirming a relationship between feeling of being in control of one's environment (he describes this as a 'sense of control') and academic achievement. Similar findings were also made in the work of Crandall, Katkovsky and Crandall, (1965) where children who felt in control of their circumstances exhibited more interest in academic pursuits, spent more time on intellectual activities and scored higher on Intelligence, and academic tests.

However, any research about factors influencing academic achievement in Sri Lanka must begin with a survey of material conditions and family background for several reasons. This piece of research is virtually the first of its kind and therefore before we involve ourselves in studying the more subtle influences we must estimate the effects of SES and background i. e. the basic sociological factors impinging on the achievement process. Also research has established unmistakably that material conditions are important and form the base for other more complex influences which intervene. We have a wealth of evidence, that has not been proved wrong, which reiterates the belief that SES is related to achievement. However, we now also know that social class per se is not a very meaningful variable, it is social class in context that is recognised as a powerful factor in determining final destinations. One must not however under-estimate the influence of SES and home background even in the more affluent countries of the present day. Douglas (1964) claimed that "it seemed probable that impoverished home environment would progressively become handicapped". Several Royal Commissions (e.g. Newson and Plowden) emphasized the disadvantage which accrued to children living in slum conditions in Britain. Sexton (1961) presents a clear picture of the extent to which poverty still acts as a major factor in the school performance of children in the U.S. Floud, Halsey and Martin (1956) also showed that where socio-economic status was lower and housing conditions less favourable, the successful children at each level were distinguished by relative material prosperity of their homes. Even researchers in the present decade do not disclaim the influence of one's class related background which we see in what Connell (1972) writes; "What we can say now is that material conditions of life in the different social classes, their collective social experience are not very far back in the causal pattern....." Toomey (1974) reviewing several studies, estimates the influence of the composite variable

of SES and family background on scholastic attainment to be around 50%. This includes apart from parental status, education and income other influences of the home such as 'literacy' in the home, the extent to which the home provides material information and ideas directly relevant to school learning, parental aspirations for their children, parents' interest and concern for and encouragement of the child's education, the physical conditions of the home, family size etc. I would argue, therefore, that should conditions of the home related to poverty change, the pattern of academic success could alter appreciably in Sri Lanka, but as things are today material disadvantage seems to be an insurmountable barrier and seems to be the first cause. But we must find the evidence to support this contention.

We therefore undertook a survey of factors which we hypothesized would influence academic achievement in our schools. The aims of this research were therefore:

- (1) to examine the relative importance of certain home related variables in relation to school achievement;
- (2) to examine the influence of certain value orientations and attitudinal factors on achievement;
- (3) to assess the relationship between home related variables and value and attitudinal ones.

A sample of 49 schools was picked randomly (using a table of random numbers) from a list of schools throughout the island. Although systematic differences between groups of children were not anticipated the sample was stratified to obtain better representation of different groups and so proportionate numbers of schools were picked from different educational regions, urban/rural areas and from different media schools. However, so as not to disrupt the school too much the sampling unit was the whole class in each school that was picked. Where there were more than one class of Grade 9's in a school, one only was picked randomly. However, although 49 schools were sampled only 41 schools were actually 'tested'. The 'testing' program had to be completed before the N. C. G. E. examination in early December and since the program did not commence till October we had only a very limited period in which to complete it and therefore certain unforeseen circumstances, like flood conditions in the South prevented us from getting to all the schools on time. We obtained a final sample of 2,231 children from Grade 9 in 41 schools in Sri Lanka.

Since the sample was large and the time and resources available were limited the most feasible method was that of the Questionnaire, although we were aware of the limitations of this method. Our information is entirely dependent on how much the child knows and how much he/she wishes to reveal in his/her answers. However, to avoid the avoidable limitations such as imperfect understanding of the questions posed, we carried out a pilot study in two schools in Colombo (one Sinhala boys' and one Tamil boys') both with a reasonably wide range of ability and SES. The final questionnaire therefore was refined on the basis of the information gained by the pilot study, i.e. the wording was changed where lack of complete understanding was suspected and where (only a very few) questions were not expected to provide any reliable information or where non-response was high, substitute questions were framed or these questions omitted. However, the pilot study showed us that given the limitations of this methodology we could still expect to gather useful data.

The three attitudinal scales were of the Likert format. They consisted of measures of

- (1) general value orientation
- (2) perceived parental interest and attitude to education
- (3) subjects' own attitude to education.

Item analyses were carried out and only items with acceptable values of discrimination (Ds) were included. Attitude scales 2 & 3 were constructed for the purpose of this research but scale 1 was based on Strodbeck's 'V' Scale. This 'V' Scale derives from a long tradition of empirical work on 'Value' measurement which lends it a degree of validity, especially because the results have been consistent and along the expected lines. However, there is the question of cross-cultural application which we have tried to answer empirically. The pilot study gave us the expectation that we should have meaningful results, and we have not been disappointed in this.

The data from the questionnaire, the three attitudinal measures and the measures of academic achievement obtained from a composite score (the grades obtained in each of the subjects were assigned a score and these were summed to form a composite score for each class) for the N. C. G. E. results gave us 35 variables in all. Unfortunately, because of limited computer facilities (and the high cost involved) we could only obtain co-efficients of correlations between these variables. However, the

results encourage the belief that trends in Sri Lanka are no different from that seen in other countries, and give us significant pointers for further analyses of the data and for future research in Sri Lanka.

Academic achievement was found to correlate with SES and factors of the family environment as shown in the table below. Some of the correlations are low although they are statistically significant. We have, however, no reason to accept the null hypothesis and can justifiably claim that an unmistakable relationship does exist between academic achievement and variables such as father's occupation, facilities in the home, literary interest of the family, family's educational background, family size and parent's interest in the child's progress report from school. Our data gives us reason to believe that the overall trends in Sri Lanka are not contrary to trends found in western research. The same kind of SES and home background factors seem to influence academic achievement. In the UK or USA or in most other industrialised countries typical correlation between father's occupation or father's education are generally not very high. For example, Miller (1970) estimates that the relationship between social class and examination performance is generally in the region of .30 - .35 in these countries. Therefore the correlation of .26 for instance, obtained between father's occupation and achievement on this study is comparable. It is also higher than correlations reported in some third world countries, especially in Africa; eg: -.09 in Malawi between parental educational attainment and examination performance (Heyneman, 1980). Further, it is possible that should father's occupation have been measured and scored more sensitively we may have obtained higher correlations. The sample too, which was randomly picked seemed to under-represent the more affluent segment of the population.

TABLE 1.

**Zero-Order Correlations between Academic Achievement and
SES, Home Background ***

Father's occupation	.26
Literary interest	.26
Facilities in the home	.26
Educational background	.20
Family size	-.17
Interest in progress report	.13
Persons/Rooms index	.12

Other variables described as "process variables" (Keeves, 1972) which were examined showed only a low relationship with academic achievement for example the child's perception of parents' interest in their school work and perceived parental plans for their future, (.08 & .01 respectively). Problems of accurate measurement could have affected these correlations because it is generally agreed that attitude measurement is affected by response sets. More objective measure of parental interest, namely their reaction to and interest in the school progress report showed a correlation of .13 but parental interest measured by a scale correlated .31 with achievement. Certain questions however produced low correlations. For instance we argued that parental interest in their children's education would be reflected in interest in the PTA and in the number and purpose of their visits to school. But these measures produced very low correlations (.01 & .03). These may be explained by the fact that apart from imperfect reporting by children, parental involvement in the PTA and their visit to school was also dependent on the amount of influence exerted by Principals and staff on parents to encourage (even coerce) interest and attendance and was therefore related to the school more than to the individual parent.

The child's aspiration for his future also showed a low, though statistically significant (1% level) correlation with academic achievement (.09). What we hypothesize is that children at this stage of their school career are still rather vague and uncertain about their future. The future in a country where opportunity is limited even for the middle-class and the more than average child, and where having any kind of well defined aspiration seems futile, would therefore be poorly defined conceptually. However, it would be possible to argue that aspirations and achievement would show some relationship, although the tendency is for children of higher achievement levels to have higher aspirations than vice versa. We cannot also say which, precedes which, although it is more likely that aspirations reflect achievement levels.

The child's emotional response to school elicited by a question measuring degree of happiness in school (rather too general a question perhaps), showed a low relationship (.08, significant at the 5% level) to academic achievement. Obviously, a child who is unhappy in school cannot function effectively but this is an aspect rather difficult to measure and certainly merits more subtle techniques and more detailed analysis.

In conclusion we may suggest that the achieving child in our schools comes from better SES levels, has supportive parents and a more enriching environment. But we need firm evidence to make more definite assertions.

The relationship between some of these variables and SES of the family were examined to discover if parental interest and support and home conditions were related to SES differences. If father's occupation is taken as an index of SES, we find that the correlations suggest that factors of SES and background have some relationship to each other.

TABLE 2
Correlations Between SES and Family Variables

Family Education	.28
Literary interests	.15
Emotional climate of home	.15
Facilities for Study	.15
Family size	- .14
Mother employed	- .09

SES or more specifically father's occupation has some relationship to the kind of home which will generate a climate conducive to educational activity. Higher literary interests such as interest in books, in reading and library membership, proper facilities for studying at home, such as a quiet place, a separate table etc., a stable emotional climate (i.e. a lack of discord between the child and members of his family, smaller families, all seem to be related to higher socio-economic status. The mother in employment seems to be negatively related to SES and is also negatively related to academic achievement (- .11). In Sri Lanka it seems that women of the lower SES levels are more likely to be employed and this could explain the negative correlation with achievement too. However, since the relationship to achievement is somewhat higher we could hypothesize that mother's full time devotion to the home is more significant than any economic contribution her employment could bring. Again the strength of the relationships are low so that there is a need for more evidence to strengthen any arguments we can make.

Turning to the question of the relationship between academic achievement and attitude and values we find that on the whole attitudinal orientation has higher correlation with academic achievement. It is however not possible to claim unequivocally that attitudes are therefore more important than home background factors in influencing academic achievement, because differences in these two sets of relationships could be due to a number of factors. For instance, there could be an element of unreliability in students' answers about father's occupation and some arbitrariness in its classification. Attitudes on the other hand were scaled and

somewhat more obliquely or projectively measured. Further, an important question concerns the comparability of different types of measurement. However, the significant fact is that attitudes and values are related to academic achievement, though again it is difficult to determine causal precedence. Poverty and other oppressive forces can give one the feeling of being controlled by one's environment and since achievement seems related to one's class position, poor achievement could compound this feeling of 'powerlessness', which could lower motivation and the general impetus to achieve leading to further lowering of achievement levels. This however, is only one explanation, although a plausible one, but there could be others. Correlations however are only indices of relationships and in no way indicative of causation.

TABLE 3
Attitudinal Variables x Academic Achievement.

	1	2	3	4
1. Achievement values	—	.40	.21	.31
2. Parental attitude40	—	.40	.31
3. Attitude to Education21	.40	—	.28
4. Academic achievement31	.31	.28	—

We could have evidence here to suggest that measurement by scaling is superior to measurement by a single question, or even by objective indices of behaviour. Certainly the measure of parental attitude to education correlates rather highly with achievement values of the child and his own attitudes to education and is clearly related to achievement too. We may therefore argue that an individual who feels 'mastery' over his environment does not yield to a fatalistic stance in relation to life's achievement situations and is in an advantageous position to approach it with confidence.

Attitudinal variables were also significantly related to a number of home background variables (Refer Table -4) but the correlations are lower than those between attitudinal factors and achievement and also between SES and family background and achievement. This suggests the possibility

that SES and family background may have an influence on the formation of positive values and favourable attitudes to education, but clearly other factors perhaps of the school environment, the individual's ability to succeed, personality related variables and other unidentified influences are also important in shaping the appropriate attitudes for success in academic matters.

TABLE 4
Values and Attitudes x Background Factors

	Facilities at home	Literary Interest	Interest in School Progress	Father's occupation
Values	.15	.12	.10	.09
Parental interest	.13	.12	.10	.10
Attitude to education	.13	.13	.09	.09

An 'activist' attitude for mastery of the environment, the feeling that one is in control of one's destiny enhances the individual's chances of success. This line of argument has support from research abroad. Sugarman (1966) found a significant relationship between high value scores and school achievement, conduct and father's occupation. Craft (1970) traced a relationship between values and early school leaving. Most of these also found a relationship between values and social class. More positive values were associated with middle class status (Jayasuriya 1960, Rosen 1959). The relationship between 'values' and 'social class' status though not very strong in our study, is still unmistakably present. This could point to a significant difference between the situation in Sri Lanka and elsewhere but this has to be verified by further research.

Evidently, a number of variables in interaction influence differential achievement but the methodology employed in this research, (cross-sectional self-report survey), and the limitations of the statistical analysis precludes us from making any causal inferences. However, we have been able to identify the outlines of a pattern of relationships and can show that SES and other factors of the home environment, appropriate value orientations and positive attitudes to education all have a contribution to make to the process of educational attainment in Sri Lanka.

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