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## FACTORS ASSOCIATED WITH HIGH AND LOW ACHIEVEMENT AT THE GRADE FIVE EXAMINATION FOR SCHOLARSHIPS AND ENTRY INTO SCHOOLS (1985)

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### Introduction :

Since its inception in 1946, a competitive examination was held at grade five level in order to award scholarships for deserving, but poor children. This examination which was known as the grade five scholarship examination selected students for scholarships tenable in Central Schools\* for a period of six years. The introduction of the free education scheme in 1945, the switch over to the mother tongue as the medium of instruction in the primary school in the late forties, and the opening up of more and more schools in rural areas, paved the way for more educational opportunity in hitherto deprived areas. The expansion of educational facilities coupled with the natural increase of population in the decades after the nineteen forties, swelled primary school enrolment to such an extent that it laid a heavy burden on the grade five scholarship examination. With increasing enrolment in primary schools, the numbers sitting the scholarship examination gradually increased.

The grade five examination which was originally held to award scholarships to central schools later began to serve yet another purpose: as a passport for entry into the junior secondary stage of more popular schools in the urban areas. As a consequence more and more interest was generated in this examination on the part of both parents, and children. The examination was renamed in 1982 as the grade five examination for the award of scholarships and entry into schools. As a result of this dual function an undue significance is attached to this examination. The poor parents rely on this examination to obtain financial support as well as good schools for their children. The more affluent parents pin their hopes on this examination as an avenue for entry into the more popular schools, specially in Colombo and provincial capitals. Over one hundred and fifty thousand candidates sit the examination annually and the stiff competition due to increas-

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\* Central schools were opened up from 1940 on the basis of one per electorate to improve both opportunity and quality of education in rural areas.

\* Education: A Centenary Volume: Ministry of Education, Sri Lanka. 1969. pp. 697-698.

ing numbers has changed the atmosphere in which students prepare for the examination over the last few years.

Students start attending tuition classes as early as grade four, if not earlier, devoting a significant proportion of time per week for such tuition. They also use special examination texts prepared by commercial institutions specifically to coach children for this examination. Schools also organize extra classes internally to aid their students. In short the grade five examination assumes the stature of a public examination due to the importance and interest attached to it. In certain cases, the status of the school also rests on the performance of its students at the examination.

It will be of considerable interest to examine the factors that are associated with high and low achievement at this examination. Are there any factors that are directly attributable to high and low achievement at this examination? What characteristics, if any, differentiate the high achievers from the low achievers? This study, therefore, is an attempt to identify the factors that lead to a difference in achievement.

### **Objectives and Methodology of the study:**

The objective of this study\* is to ascertain whether the following variables lead to a difference in achievement, i.e. high and low achievement at the grade five examination:

- i. The type of school in which the child is educated.
- ii. The chronological age of the child.
- iii. Attendance in school.
- iv. Achievement in school.
- v. Parents' educational level.
- vi. Parents' occupational status.
- vii. No. of children in the family and the rank order of the child.
- viii. The amount of reading done by the student.
- ix. Amount of tuition taken by the child.
- x. Examination texts used in preparation for the examination.
- xi. Parental expectation level and interest.
- xii. Motivation in the student to pass the examination.
- xiii. Teachers' rating of the pupil.

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\* The survey was carried out from April-September 1985.

In order to examine the association of the above variables with high and low achievement at the examination, a sample of 405 students was drawn from four different types of schools as follows :

Type of Schools	No. of Schools	No. of Students
Popular schools in the outstations	4	160
Schools in suburban areas	3	120
Schools in rural areas	2	65
Schools in non affluent urban areas	2	60
Total	11	405

The four popular schools in the outstations are from Ambalangoda, Kottawa, Minuwangoda and Kalutara. The three suburban schools are in Kiribathgoda, Kelaniya and Kesbewa. The rural schools are two schools in Baddegama and Bandaragama. Finally, the two urban non-affluent schools were selected from Kirillaona and Pettah, in the Municipality of Colombo.

The students from these eleven schools, drawn from four different types of environments represent varying socio-economic strata, with different levels of motivation and interests in education and different degrees of aspirations.

The four popular schools in the outstations enjoy pride of place in the respective areas. The three suburban schools are also popular in their localities. Students from these seven schools sit the grade five examination, some seeking scholarships and good schools and others for entry into more popular schools within the Municipality of Colombo. The two rural schools and the other two urban non-affluent schools differ somewhat from the other seven schools in that they show a lesser degree of enthusiasm in examinations.

The data from the sample was gathered through a questionnaire which consisted of structured as well as non-structured items. The data for the questionnaire was filled by the respective class teachers in consultation with students and parents, and by referring to school records such as attendance registers and test marks. The data collection was carried out between April and September 1985.

A definition of some of the terms used in the study seems pertinent at this point.

### 1. High and low achievement:

A high achiever in this study is a student who obtains a pass in the grade five examination. The cut off point for a pass in the four districts concerned: Colombo, Gampaha, Kalutara and Galle varied slightly. A low achiever on the other hand is a student who has failed.

### 2. Achievement in School:

Average mark scored by the student in first language and mathematics in tests held at district/circuit level, for at least two years.

### 3. Attendance:

Attendance taken as a percentage of the total number of school days, for at least two years.

The focus of data analysis was to ascertain whether any given variable was associated with high and low achievement. In other words the statistical procedure used determines whether high and low achievement were independent or dependent on a given variable. Thus the Chi-square test for independence between two variables was used as the main statistical method to determine the significance of the association. In addition to the chi-square test, percentage analysis was carried out for descriptive presentation of data.

The sample for this study was 405 of which 54 students passed the examination. Out of the 351 students who failed the examination 43 had to be left out of the data analysis as the questionnaires returned were incomplete and contained insufficient data. Therefore 54 students who passed the examination (high achievers) and 308 who failed (low achievers) have been the subjects of this study.

### Analysis of data:

#### Type of school Vs Achievement

In examining whether the type of school and achievement are associated it was found that there is a strong association. The chi-square value of 66 exceeds the critical value of 11.34 for 3 degrees of freedom at .01 level. In other words achievement is not independent of the

type of school. All 54 high achievers came from two types of schools, the popular outstation (66.7 percent) and suburban (33.3 percent). None of the students in rural and urban non affluent schools were high achievers. (See table 1). In the entire sample 54 out of 405 or 13.3

TABLE 1

Type of School Vs High Achievement

Type of School	Location of School	No. of Students	High Ach	%*	%**
A. Popular Outstation schools	1. Ambalangoda	40	7	22.5	66.7
	2. Kottawa	40	14		
	3. Minuwangoda	40	7		
	4. Kalutara	40	8		
		160	36		
B. Suburban Schools	5. Kiribathgoda	40	12	15.0	33.3
	6. Kelaniya	40	5		
	7. Kesbewa	40	1		
		120	18		
C. Rural Schools	8. Baddegama	25	-	-	-
	9. Bandaragama	40	-		
		65	-		
D. Urban Non affluent	10. Kirillapona	20	-	-	-
	11. Pettach	40	-		
		60	-		
Total	-	405	54	13.3	100.0

\* High Achievers as a percentage of total no. of students.

\*\* Percentage of high achievers in each type of school.

percent were high achievers and a breakdown according to type of school reveals that 22.5 percent from the popular outstation and 15 percent from the suburban schools are high achievers. The students in the popular outstation schools have the highest probability of being a high achiever. Therefore, the type of school has a bearing on achievement at the grade five examination.

### Age Vs Achievement:

In ascertaining whether achievement and chronological age are associated, the chi-square value of 1.89 which is less than the critical value of 9.49 for 4 degrees of freedom at 5 percent level reveals that the association is not significant. Therefore, achievement is independent of chronological age. A perusal of percentage data according to age group in Table 2 does not indicate striking differences for the two groups except in two cases; age group 10.6 – 10.9 where the percentage of high achievers is higher. and age group 11.3 – 11.6 where the percentage of low achievers is higher. On the whole both high achievers and low achievers are normally spread across age groups, with the maximum percentages falling roughly between 10.6 and 11.6.

TABLE 2  
Age Vs Achievement

Age	High Achievement		Low Achievement		Total	
	N	%	N	%	N	%
9.6 – 10.3	01	1.8	03	.9	4	1.1
10.3 – 10.6	06	11.1	36	11.7	42	11.6
10.6 – 10.9	11	20.4	42	13.6	53	14.6
10.9 – 11	18	33.3	100	32.5	118	32.6
11 – 11.3	11	20.4	76	24.7	87	24.0
11.3 – 11.6	05	9.3	47	15.3	52	14.4
11.6 – 12.3	02	3.7	04	1.3	6	1.7
Total	54	100.0	308	100.0	362	100.0

Chi-square = 1.89 for df 4 < 9.49 at .05 level

### Attendance Vs Achievement:

The obtained chi-square value of 128.74 exceeds the critical value of 11.34 for 3 degrees of freedom at one percent level. Therefore achievement at the grade five examination is dependent on attendance. Sixty three percent of the high achievers had a very good attendance: over 90 percent attendance. The corresponding figure for the low achievers was 6.5 percent. (see table 3). The rest of the high achievers (37%) had recorded a good attendance: between 80–90 percent. On the other hand 52.3 percent of the low achievers had either a poor (60–79% attendance) or very poor (below 59 percent attendance) attendance figures. Thus high and low achievers differ in terms of attendance.

**TABLE 3**  
**Attendance Vs. Achievement**

<i>Attendance</i>	<i>High</i>		<i>Low</i>		<i>Total</i>	
	N	%	N	%	N	%
Over 90%	34	63.0	20	6.5	54	14.9
80 – 89%	20	37.0	127	41.2	147	40.6
60 – 79%	—		134	43.5	134	37.0
Below 59%	—		27	8.8	27	7.5
<b>Total</b>	<b>54</b>	<b>100.0</b>	<b>308</b>	<b>100.0</b>	<b>362</b>	<b>100.0</b>

Chi-square = 128.74 > 11.34 for df 3 at .01 level.

**TABLE 4**  
**Achievement in School Vs. Achievement in Examination**

<i>Achievement in School</i>	<i>High</i>		<i>Low</i>		<i>Total</i>	
	N	%	N	%	N	%
Over 91	15	27.8	2	.7	17	4.7
81 – 90	26	48.1	37	12.0	63	17.4
71 – 80	11	20.4	77	25.0	88	24.3
61 – 70	2	3.7	62	20.0	64	17.7
51 – 60	—		48	15.7	48	13.3
Below 50	—		82	26.6	82	22.6
<b>Total</b>	<b>54</b>	<b>100.0</b>	<b>308</b>	<b>100.0</b>	<b>362</b>	<b>100.0</b>

Chi-square = 126.05 > 15.09 for df 5 at 01. level.

### **Achievement in School vs Achievement in Examination :**

Achievement in school has a high association with achievement in the grade five examination, as indicated by the chi-square value of 126.05 which exceeds the critical value of 15.09 for 5 degrees of freedom at .01 level. Table 4 indicates that 27.8 percent of high achievers have scored over 91 in tests held in school. 48.1 percent have scored between 81 and 90. None of the high achievers fall below 60 in school test marks. On the other hand 42.3 percent of the low achievers have school test marks falling below 60. Only 12.7 percent of the low achievers have scored above 81. The correlation co-efficient between high achievement in school and high achievement in the examination is .84, which indicates a high degree of relationship between the two variables.\*

Achievement in school tests also varies according to the type of school. Popular outstation schools have displayed a higher level of achievement than the other three types. Rural schools and Urban non-affluent schools have the lowest levels of achievement.

### **Educational level of parent vs achievement:**

Achievement in the grade five examination is dependent on the educational level of the parents as evident from the chi-square tests for significance. For father : the obtained chi-square value of 86.92 is greater than 13.28 for 4 degrees of freedom at .01 level. 53 fathers of 54 high achievers have received an education above G.C.E. (O/L), whereas 38 percent of the low achievers' fathers have not passed the G.C.E. (O/L).

All the mothers of high achievers have received an education above G.C.E. (O/L). 42 percent of the low achievers have mothers who have not passed G.C.E. (O/L). The chi-square value of 35.36 is significant at .01 level. (Table 5).

It should also be taken into consideration that out of 21 fathers who possess a degree only 11 cases fall into the category of high achievers. Similarly out of 17 mothers who possess a degree only 6 cases fall into the category of high achievers. In three cases, despite both parents being graduates the children have failed the examination.

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\* Pearson's product moment correlation.

r = .84      N = 54

TABLE 5

## Educational Level of Parent Vs Achievement

Educational Level	Father				Mother			
	High		Low		High		Low	
	N	%	N	%	N	%	N	%
Degree	11	20.4	10	3.2	6	11.0	11	3.6
Passed GCE & AL	13	24.1	28	9.1	7	13.0	25	8.1
Passed GCE (OL)	29	53.7	153	49.7	41	76.0	142	46.1
Educated Grade 6-9	1	1.8	92	29.9	—	—	90	29.2
Educated Grade 1-5	—	—	24	7.8	—	—	36	11.7
No schooling	—	—	1	.3	—	—	4	1.3

Father : Chi-square = 86.92 > 13.28 for df 4 at .01 level

Mother : Chi-square = 35.36 > 13.28 for df 4 at .01 level

The educational levels of parents also differ according to the type of school. The educational level of parents of children in popular outstation schools is definitely higher than that of parents in rural and urban non-affluent schools.

### Occupational Category of parents Vs Achievement:

Table 6 gives ten categories of employment and the percentage of high and low achievers that corresponds to each category. 64.8 percent of the high achievers belong to the first two categories of employment which are prestigious ones demanding high educational qualifications. The percentage of low achievers that belong to the first two categories is 28.3. Another 29.7 percent of the high achievers belong to the next three categories of employment which are occupations that require lower educational qualifications. The percentage of low achievers that belong to these three categories is 31.4. The percentage of high achievers with parents engaged in manual jobs is very low : 1.8 percent compared to the percentage of low achievers with fathers in manual jobs which is 27.0 percent, the highest percentage for any category.

Examining the relationship of high achievement with employment category from another angle, i.e. probability of high achievement

computed as a percentage of high achievers of the total in each category, it is seen that category one has the highest probability with fifty percent, followed by category two which is 24 percent. When the occupational category of mother is considered, category two is the only occupational category which has a probability of high achievement. Out of 20 mothers of high achievers in category two 15 were teachers.

TABLE 6  
Occupational Category of parents (Percentages)

Occupational Category	High		Low		Probability of High Ach.	
	Father	Mother	Father	Mother	Father	Mothes
1. Managerial Lecturer etc.	20.4	—	3.5	—	50.0	—
2. Teacher, Clerk etc.	44.4	37.0	24.8	16.6	24.0	28.0
3. Mechanical Technical	5.5	—	9.0	—	10.0	—
4. Business, Trade, etc.	13.0	—	15.6	1.0	13.0	—
5. Security, forces etc.	11.2	—	6.8	—	22.0	—
6. Manual	1.8	—	27.0	4.2	1.0	—
7. Abroad	—	—	1.0	3.0	—	—
8. Not employed	3.7	63.0	8.4	75.2	7.0	13.0
9. Deceased	—	—	2.3	—	—	—
10. Pensioner	—	—	1.6	—	—	—
Total	100.0	100.0	100.0	100.0	—	—

A close relationship could also be observed between the educational qualifications of parents and their occupations. The children of highly educated parents who are employed in more prestigious jobs have a greater probability for high achievement.

#### Number of children in family and rank order $v_s$ achievement :

Achievement in the grade five examination is not dependent on the number of children in the family; chi-square = 6.3 is less than 12.59

for 6 degrees of freedom, at .05 level. The greater percentage of children belong to large families. Only 27.8 percent of high achievers and 20 percent of low achievers belong to families with 1 or 2 children, whereas 59.3 percent of high achievers and 57 percent of low achievers belong to families with 3–4 children. The remaining 13 percent of high achievers and 23.7 percent of low achievers come from families with over 5 children. (Table 7) The educational level of parents has a direct bearing on the number of children in the family.

**TABLE 7**  
No. of children in family Vs Achievement

No. of Children	High		Low		Total	
	N	%	N	%	N	%
1	2	3.7	13	4.3	15	4.1
2	13	24.1	46	14.9	59	16.3
3	15	27.8	98	31.8	113	31.2
4	17	31.5	78	25.3	95	26.2
5	5	9.3	36	11.7	41	11.3
6	1	1.8	20	6.5	21	5.8
7 and over	1	1.8	17	5.5	18	5.0
Total	54	100.0	308	100.0	362	100.0

Chi-square = 6.3 < 12.59 for df 6 at .05 level.

Rank order of the child in the family too is independent of high and low achievement. The chi-square value of 4.58 does not exceed the critical value 11.07 for 5 degrees of freedom at .05 level. The majority of the children in this sample are the eldest – 43.6 percent, or, the second child – 25.4 percent. (Table 8)

**TABLE 8.**  
Rank order in family Vs Achievement

Rank Order	High		Low		Total	
	N	%	N	%	N	%
1	28	51.8	130	42.3	158	43.6
2	12	22.2	80	26.0	92	25.4
3	6	11.1	42	13.6	48	13.3
4	6	11.1	22	7.1	28	7.7
5	1	1.9	20	6.5	21	5.8
6	1	1.9	9	2.9	10	2.8
7 and below	—	—	5	1.6	5	1.4
Total	54	100.0	308	100.0	362	100.0

Chi-square = 4.58 < 11.07 for df 5 at .05 level.

### Whether the child is living with parents or not :

The chi-square value of 5.29 which is less than 5.99 for 2 degrees of freedom at .05 level reveals that high and low achievement are not dependent on with whom the child is living. Of the high achievers 96 percent live with both parents. The corresponding figure for low achievers is 86 percent. Only two high achievers live with grand parents. However, there are 43 low achievers who do not live with both parents, (Table 9) and of them 21 live with relatives or grand parents.

TABLE 9.  
Whether the child is living with parents or not

Relationship	High		Low		Total	
	N	%	N	%	N	%
Father & Mother	52	96.0	265	86.0	317	87.5
Father only	—	—	8	2.6	8	2.2
Mother only	—	—	13	4.2	13	3.6
Siblings	—	—	1	.3	1	.3
Grand parents	2	4.0	16	5.3	18	4.9
Relatives	—	—	5	1.6	5	1.4

Chi-square = 5.29 < 5.99 for df 2 at .05 level.

### Reading Newspapers Vs Achievement :

The number of newspapers a child reads has a relationship with achievement as indicated from the chi-square of 31.28 > 15.09 for 5 degrees of freedom which is significant at .01 level. Among high achievers 75.8 percent read widely with 3 or more newspapers, a high figure when compared with low achievers of whom 6.5 percent do not read at all and 53.2 percent read only 2 newspapers or less. A number of newspapers specially children's papers publish model question papers for students sitting the grade five examination. A student reading two or three newspapers gets exposed to a large number of question papers both in language and mathematics.

### No. of model question paper texts used for preparation Vs achievement :

A large number of texts containing model question papers in both subjects — language and mathematics is available to students sitting this examination. The chi-square value of 14.05 which exceeds the critical value of 11.34 for 3 degrees of freedom at .01 level reveals that there is a significant relationship between the number of texts

used and high and low achievement. Out of the low achievers 25.7 percent have not used these texts. The corresponding figure for high achievers is 18.5 percent. 30.8 percent of the low achievers had used only one text. The corresponding figure for high achievers is 18.5 percent. The percentage of students who have used two books is equal in both groups. However, 29.5 percent of the high achievers have used 3 books whereas only 11.4 percent of the low achievers seem to have done so. (Table 11)

**TABLE 10**  
No. of newspapers read Vs Achievement

No. of papers	High		Low		Total	
	N	%	N	%	N	%
1	—		34	11.0	34	9.4
2	12	22.3	130	42.2	142	39.2
3	16	29.6	70	22.7	86	23.7
4	10	18.5	34	11.0	44	12.2
5	11	20.3	14	4.5	25	7.0
6 & over	4	7.4	6	1.9	10	2.7
Nil	1	1.9	20	6.5	21	5.8

Chi-square = 31.28 > 15.09 for df 5 at .01 level.

**TABLE 11**  
No. of examination texts used for preparation

No. of Texts	High		Low		Total	
	N	%	N	%	N	%
Nil	10	18.5	79	25.7	89	24.5
1	10	18.5	95	30.8	105	29.0
2	16	29.6	92	29.8	108	29.8
3	16	29.6	35	11.4	51	14.2
4	2	3.8	4	1.3	6	1.6
5	—	—	3	1.0	3	.8

Chi-square = 14.05 > 11.34 for df 3 at .01 level.

Students also use supplementary texts in grammar, comprehension and mathematics as additional material for preparation. The chi-square value of 2.65 which is less than the critical value of 5.99 for 2 degrees of freedom at .05 level indicate that achievement in this case is not dependent on the number of supplementary texts used.

Approximately 57.2 percent in both groups have not used any supplementary texts. Twenty five percent have used only 1 text and the text in most cases was Kumara Rachanaya. 16.6 percent in both groups have used two texts, very often Kumara Rachanaya and Mawbasa or Kumara Rachanaya and Ganitha Puhunuwa. (Table 12).

#### **Private tuition Vs Achievement:**

An all important variable in education today is private tuition. Students sitting the grade five examination start attending private tuition classes very often held by teachers themselves, as early as grade four. Therefore, it is pertinent to ascertain the nature of relationship between the amount of private tuition taken and high and low achievement. The obtained chi-square value of 7.61 for 3 degrees of freedom does not exceed the critical value of 7.81 at .05 level. High and low achievement, therefore, is not dependent on the amount of private tuition obtained.

From table 13, it is evident that 45.8 percent of the total sample have not obtained private tuition. However, 55.6 percent in high achieving group and 36.4 percent in the low achieving group have gone for 6 or more hours of private tuition per week.

The amount of private tuition a student obtains largely depends on the interests of parents and the type of school he attends. For instance in two popular outstation schools private tuition for over 6 hours was obtained by a large percentage of students. In the rural schools and the urban non-affluent schools on account of the lesser interest shown by parents the incidence of tuition is less.

In addition to private tuition, all schools except one suburban school (Kiribathgoda) had held extra classes to prepare their students for the examination. The school that did not hold extra classes has produced the second best results in this sample.

#### **Extra help by members of the family Vs Achievement :**

It is evident from table 14, that the greater percentage 82.4 percent of the total had received assistance from family members. But as revealed by the chi-square value of 1.31 which is less than the criterion value of 3.84 for 1 degree of freedom, high and low achievement is not dependent on the help given by family members. In both groups the majority had received assistance from family members.

TABLE 12

No. of other texts used Vs Achievement

No. of texts	High		Low		Total	
	N	%	N	%	N	%
Nil	31	57.4	176	57.2	207	57.2
1	17	31.5	74	24.0	91	25.1
2	5	9.3	55	17.8	60	16.6
3	1	1.8	3	1.0	4	1.1

Chi-square = 2.65 &lt; 5.99 for df 2 at .05 level.

TABLE 13

Amount of private tuition Vs Achievement

No. of hours	High		Low		Total	
	N	%	N	%	N	%
No. of extra tuition	18	33.3	148	48.0	166	45.8
1 - 5 Hours	6	11.1	48	15.6	54	15.0
6 - 10 Hours	25	46.3	89	28.9	114	31.5
Over 11 Hours	5	9.3	23	7.5	28	7.7

Chi-square = 7.61 &lt; 7.81 for df 3 at .05 level.

TABLE 14

Extra help by family members

Whether helping	High		Low		Total	
	N	%	N	%	N	%
No	7	13.0	57	18.5	64	17.6
Yes 1-2 hours	45	83.3	238	77.3	283	78.2
3-4 hours	2	3.7	13	4.2	15	4.2

Chi-square = 1.31 &lt; 3.84 for df 1 at .05 level.

**Motivation in the student to pass the examination :**

The class teachers were requested to assess the interest shown by the student to pass the examination. Among high achievers 95 percent showed a high interest while only 5 percent displayed average interest. Within the low achieving group only 56.8 percent showed a high interest while 36 percent indicated only an average interest. Seven percent showed no interest at all to pass the examination (Table 15) Chi-square of  $7.81 > 6.61$  for 1 degree of freedom is significant at .01 level.

Therefore, high and low achievement is dependent on the motivation in the student to pass the examination.

**Expectation level of the parents:**

In ascertaining the relationship between expectation level of parents with achievement, the obtained chi-square of 12.58 exceeds the critical value of 9.21 for 2 degrees of freedom at .01 level. The two variables therefore, are not independent. All parents of high achievers expect their children to enter the university. Sixty one percent of the parents of low achievers expect their children to enter the university while the remaining 39 percent are content with either G.C.E. O/L or A/L. (Table 16).

**Parental interest in school work :**

Parents who are keen on the education of their children inquire about the day's work in school. Among high achievers 85 percent of the parents do so daily while the corresponding figure for low achievers is 70 percent. However, high and low achievement does not depend on parental inquiries about school work as the chi-square value of 1.76 for 1 degree of freedom is not significant even at .05 level. (Table 17).

One indicator of parental interest in the education of their children is the frequency of their meeting the class teacher. The chi-square value of 5.74 for 1 degree of freedom is significant at .05 level. 35 percent of the parents among high achievers meet the class teacher very often while the corresponding figure for low achievers is 10 percent. Sixty percent of the parents of high achieving students sometimes meet the teacher while the corresponding figure for low achievers is 83 percent. Only a small percentage of parents never meet the class teacher. (Table 18).

**TABLE 15**

Motivation in the student to pass the examination. (percentage)

<i>Level of interest</i>	<i>High</i>	<i>Low</i>
Very high	95.0	56.8
Average	5.0	36.0
Not interested	—	7.2
Total	100.0	100.0

Chi-square = 7.81 > 6.61 for df 1 at .01 level.

**TABLE 16**

Expectation level of the parents (percentage)

<i>Expectation level</i>	<i>High</i>	<i>Low</i>
Enter University	100.0	61.0
Pass G.C.E. (A/L)	—	9.0
Pass G.C.E. (O/L)	—	30.0

Chi-square = 12.58 > 9.21 for df 2 at .05 level.

**TABLE 17**

Parents inquiring about work done in school

<i>Frequency</i>	<i>High</i>	<i>Low</i>
Daily	85.0	70.0
Sometimes	15.0	29.1
Never	—	.9
	100.0	100.0

Chi-square = 1.76 < 3.84 for df 1 at .05 level.

**TABLE 18**

Parental visits to School to meet class teacher

<i>Frequency</i>	<i>High</i>	<i>Low</i>
Very often	35.0	10.0
Sometimes	60.0	83.0
Never	5.0	7.0
	100.0	100.0

Chi-square = 5.74 > 3.84 for df 1 at .05 level.

**Teacher rating Vs Achievement :**

The expectation level of the teacher and the rating of the student by teacher in regard to certain characteristics of the student also encourage and promote high achievement in students. Teachers were therefore requested to rate the students regarding certain characteristics and the results are given in percentages in the following sections :

**1. Students' ability to participate in learning activities**

Seventy five percent of the high achievers were rated very high while the remaining twenty five percent have been rated as high.

Out of the low achievers 24.3 percent were rated as very high while 40.6 percent were rated as high. However, 35.1 percent were rated as average or below average.

**2. Leadership quality in student**

Among high achievers 70 percent were rated as very high, while 25 percent were rated as high. Only 5 percent received the average grade.

But among low achievers only 28 percent received a very high rating. 24.3 percent received a high rating and the remaining 47.7 percent received either average or below average ratings.

**3. Student interest in learning**

Ninety percent of the high achievers were rated as having very high interest. The remaining 10 percent had a high interest.

For the low achievers only 20.7 percent had a very high interest. 35.1 percent had a high interest. The remaining 44.2 percent had average or low interest in learning.

#### **4. Learning ability in student**

Among high achievers 70 percent were rated as possessing very high learning ability; 30 percent as possessing high learning ability.

In the low achieving group only 18 percent were rated as having very high learning ability. While 35 percent had high ability, 47 percent had only average or low ability.

#### **5. Parental interest in student regarding studies**

In the high achieving group 70 percent were considered to have a very high interest, 30 percent as having high interest.

Among the low achievers only 27 percent displayed a very high interest. 21.6 percent had shown a high interest and 51.4 percent had an average interest or very low interest, in the perception of the teacher.

#### **6. Learning facilities**

Among high achievers all had adequate learning facilities (equipment). But among low achievers only 66.6 percent had adequate learning facilities 28.8 percent had average facilities while 4.6 percent did not possess the necessary facilities at all.

### **Discussion and conclusions :**

The chi-square tests of significance enabled us to differentiate certain factors that are dependent and independent of high and low achievement in the grade five examination.

#### **Dependent factors :**

1. Type of school.
2. Attendance in school.
3. Achievement in school.
4. Educational level of parents.
5. Occupational category of parents.
6. Amount of reading done by student. (Newspapers).
7. No. of examination texts used.
8. Motivation in the student to pass examination.
9. Parental visit to meet teacher.
10. Parental expectation level.

**Independent factors:**

1. Chronological age of student.
2. No. of children in family.
3. Rank order in family.
4. Whether the child lives with parents or not.
5. Other supplementary texts used.
6. Private tuition.
7. Extra help by family.
8. Parental inquiry about work done in school.

The ten dependent factors listed above seem to be associated with each other in some way. It was seen that the type of school plays a vital role in the achievement levels of students as all of the high achievers came from two types of schools: popular schools in outstations (66.7 percent) and suburban schools (33.3 percent). These two types of schools have better facilities with respect of both staff and plant than the other two types of schools: rural and urban non-affluent. Entry into these schools is fairly competitive and as such children of keen and the more influential parents somehow gain admission into them. The students though of tender age are very keen mainly because of parental interest and pressure and peer group aspirations. Hence attendance in school is very satisfactory. The high achievers in this case had over 80 percent attendance during at least two school years.

The achievement levels of students in the popular schools in the outstations and suburban schools are higher than in the rural and urban non-affluent schools. Academic ability of the student population and the high interest in learning largely account for their high level of achievement. Among the high achievers in this sample 96.3 percent had scores of over 71. The mean was 83.57. The achievement levels of popular outstation schools at Ambalangoda and Kottawa were very high. In contrast the rural schools in Baddegama and Bandaragama and urban non affluent schools in Kirillapona had very low achievement levels even in school tests.

The socio-economic level of the parents also differs to a considerable extent according to the type of school. Almost all children of highly educated parents who hold jobs of relatively high status attend the popular outstation schools and suburban schools. On the other hand rural schools and urban non-affluent schools cater to the children of villagers and dwellers in congested urban areas respectively.

The high achievers because of their background are wide readers. The parents themselves being well educated encourage children to read a lot. Most educated parents provide their children with reading material. Here it is interesting to note that the mothers of 15 high achievers out of 54 are teachers.

The high achievers also have utilized more examination texts than the low achievers. The number of examination texts a student uses depends largely on parental interest, competition in the school itself and the recommendations and suggestions of the class teacher. A certain pattern in the type of text used was visible according to the type of school. The recommendations of the teachers have been a deciding factor in this respect.

It was also seen that the high achievers naturally had an interest in passing the examination; their parents too were keen and very often they visited the school and met the teachers.

The ten factors listed as dependent in general have some relationship to the type of school. The chi-square tests for significance have revealed that these ten factors by themselves or in combination with others could produce differences in achievement. Therefore, high and low achievement are dependent on these ten variables.

The chi-square tests have revealed eight other factors as not significant. Hence high and low achievement are independent of these factors. The chronological age of the student though it varies from 9.6 to 12.3 has not been a significant factor in bringing about differences in achievement at the grade five examination. The number of children in the family too is not a contributory factor. However, the majority of the students in the sample belong to relatively large families of over 3 or more children. (80 percent). The rank order of the student in the family too has been an independent factor as far as achievement is concerned. The majority of the children live with both parents. (87.5 percent). Hence this variable has emerged as an independent factor.

A very important finding of this study has been the emergence of private tuition as an independent factor. Similarly, extra help by family members and the number of extra text books used have remained as independent factors. The parental background, attendance in school and academic ability measured by school examination have stood out as more important factors, over and above private tuition.

Innate ability of the student enriched or suppressed by the type of parental and cultural background has proved decisive over chronological age and private tuition.

It should also be taken into consideration that the age at which students sit this examination is vital; for a large percentage of these students the transition from one stage of development to another takes place around this age. Therefore, the level of mental maturity should be given more priority than chronological age.

It appears that a large number of students spend a considerable amount of time attending extra tuition classes held by the school itself as well as outside the school. It would be very useful to investigate into the nature of teaching carried out in these classes. In most cases tuition is confined to answering of model question papers published by commercial institutions. Continuous coaching and practice takes place and sometimes the effect is not at all significant, specially in case of less mature children who have not reached the stage of abstract reasoning. Individual attention to suit the needs of individual students is very rare in most of the tuition classes.

In taking into account the teacher rating of high and low achievers on six characteristics : participation in learning, leadership, interest in learning, learning ability, parental interest and availability of learning facilities it was found that the rating given to high achievers was very high. Teacher expectation and rating play a crucial role in the achievement of students.

It has been clearly established that as in the G.C.E. O/L and A/L examinations, the type of school a child attends and his or her socio-economic background play an important role in determining the level of achievement.\* The link between the socio-economic status and achievement is visible even in the primary school. Primary schools in Sri Lanka are believed to be more uniform in standards. But when achievement is taken into consideration differences are noted between

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\* Rupasinghe, S. (1978) An investigation into the achievement of some concepts in social studies by students completing junior secondary level in Sri Lanka, **Unpublished M. Phil thesis**. University of Colombo clearly establishes the link between socio-economic status and achievement and type of school and achievement at grade nine level.

\* Also : Type of school and its relationship with other factors related to schooling. **University of Colombo, Review Vol. 1. No. 6, 1986**, establishes the link between type of school with parental background, achievement, aspirations and attitudes. (Forthcoming)

schools and within school, according to other significant factors such as socio-economic status of the students, their academic ability and interest and aspiration level.

In conclusion, the implications of the more salient findings of this study on policies and perceptions at national level may be highlighted. It has been revealed that achievement is closely connected with the type of school and the socio-economic environment of the student. Therefore, a genuine effort should be made to uplift the deprived schools in villages and urban slum and shanty areas. Whether the proposed cluster school system would deliver the goods, in this regard, remains to be seen. In addition to the input to improve the school environment steps should also be taken to improve the socio-economic environment of the students concerned. Improving the physical facilities in the school plants alone without a parallel enrichment of the learner's environment will fail to make a substantial impact and will only result in wastage of scarce resources. Some of the plausible measures that could be adopted in this respect are : (i) education of parents of the importance of stimulating environment, both intellectual and cultural, during infancy and childhood, (ii) a well planned system of preschool centres for deprived environments, (iii) provision of experiences and material for intellectual and cultural enrichment through a system of child centres and (iv) in the long run, a better and equitable distribution of national income.

Finally, the perception of parents of the role of private tuition needs reconsideration. Competition is very high, to gain admission to the more popular schools and this prompts parents to seek tuition. A large majority of parents consider tuition a necessity due to lack of confidence in their children's ability to face the keen competition. In most of these tuition classes the children experience drill in the form of model question papers provided in texts by individuals who exploit the situation. The researcher does not deny the effect of proper coaching. However, in most tuition classes at this level mass drill exercises are conducted without focussing on individual difficulties or abilities of the student; such mechanical drill is a waste of time and money. Any additional teaching or tuition should be geared to the individual needs of the learner. Therefore, it is the duty of the teacher to guide the parents of the nature of assistance required by the individual pupil rather than recommending indiscriminate enrolment in tuition classes. Extra teaching should not be a burden on the student, in particular, the use of a large number of texts which are mostly replications should be discouraged. These students are developmentally

at a critical point of transition from one stage of development to another; tuition cannot work miracles on intellectually immature students. Systematically conducted continuous evaluation supported by remedial teaching would be more beneficial and bring forth long term results.