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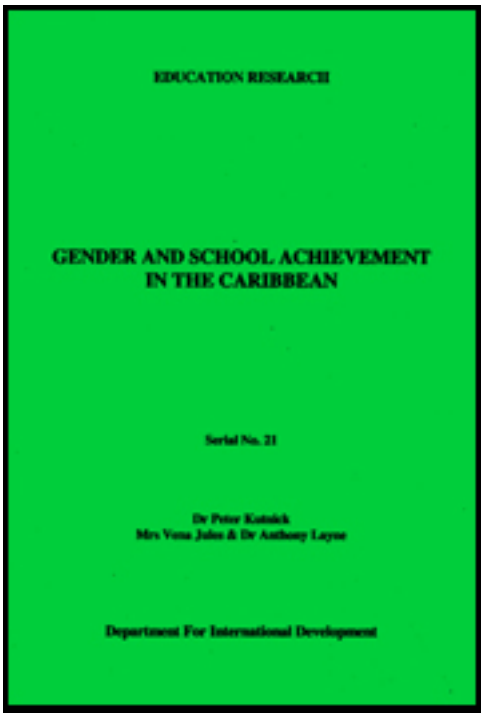

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EDUCATION RESEARCH

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Acknowledgements

The Gender and School Achievement in the Caribbean Project is the result of many years of collaborative work between the authors. The ideas which lead to the formal project proposal began in Trinidad during the mid 1980s. At that time, Vena Jules and Peter Kutnick were members of the Faculty of Education at the University of the West Indies. A common interest was established in consideration of the relationship between children and their teachers and a number of small scale research projects were planned to overcome the dearth of research about the effects of schooling in the Caribbean. Our original research showed widespread success of girls in schools - an unexpected result at the time when compared to similar research undertaken in developed and developing countries. The original findings lead to the current research project which extends the study to provide in-depth observations of classroom processes and surveys of educational achievement across the Caribbean.

We would like to thank the Department For International Development (DFID) for funding of the research project (contract 94 3480a). Although this paper is issued by the DFID, the views expressed are entirely those of the authors and do not represent the DFID's own policies or views. Any discussion of the content should therefore be addressed to the authors and not to the DFID.

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1. Introduction

This research project was undertaken within the scope of concern for human resource development and particular concern for documented areas of gender discrimination within education. In the recent past human resource development in education has been limited to expanding access to education. Within the last few years, aid and educational organizations realized that quality of educational experience in developing countries may not 'match' access and a number of instances of potential 'discrimination' within educational systems have been identified (mainly due to gender, social class and religion). One research finding characteristic of educational outcomes in developing countries is that females do not perform as well as males (in terms of achievement within various subjects and 'staying-on' rates in secondary education). Research into the relationship of sex differences, gender and educational attainment has drawn upon biological, psycho-social and (latterly) political theories to help explain results that differentiate the performance of boys and girls.

THE PROJECT

This research project addresses the problem of gender differentiated achievement and staying-on, but approaches it from a distinct angle: exploring why females have stayed-on in schools and achieved comparatively better educational achievement scores in the Caribbean countries of Trinidad, Barbados and St Vincent. These results are consistent throughout the educational system of these countries: in primary and secondary schools, across social classes, in most curriculum subjects and across various types of stratified secondary schools (see Kutnick and Jules, 1988; Jules and Kutnick, 1990). Two main questions arise from the perspective of human resource development:

1. why are females succeeding so consistently within the classroom and educational system, and

2. are female educational strategies distinct from the strategies displayed by males at the classroom level?

The project is set against a reported background of limited academic success amongst females in developing countries and within science and mathematics curricula in developed countries (see Acker, 1988; Delamont, 1983; Serbin, 1983; Skelton, 1990;

among others). Studies of school achievement in developing countries, especially in the African continent, identify that success is related to socio-economic status of parents, sex and age of pupils (see Heyneman, 1976) although these findings may be confounded by school factors such as class size, provision of texts, location of school (see Schiefelbein and Simmons, 1980). Among personal aspects used to explain lack of school achievement, gender (in particular being a female) has consistently been alluded to (King, 1987; Sutherland, 1987), especially as it interacts with religious orientation and socio-economic status to explain access to schools and choice of subject (Brock and Cammish, 1997).

On the other hand, Caribbean educational research provides a contrasting picture of gender and school achievement from African and Asian dominated research. The World Bank (1993) brought together information concerning 'Access, Quality and Efficiency in Education in the Caribbean Region'. With regard to school achievement the report identifies that most countries within the Caribbean region have good (if not universal) access to primary education and a large proportion of the population have access to post-primary schooling. Variation in school achievement among these countries is largely explained by socio-economic status of parents, although a clear second order of variance is explained by sex of pupils; females out-perform males at various levels of schooling, in a broad range of curriculum subjects and this is substantiated on within-class and national examinations. Higher levels of school achievement by females have been found in:

Primary schools: Barbados: Females show higher reading achievement and higher scores on English and mathematics examinations (Commonwealth Secretariat, 1990);

Trinidad: Females show a lower drop-out rate and lower repeater rate (Trinidad **CSO,** 1988), and girls score higher than boys on the Common Entrance Examination (World Bank, 1993).

Secondary schools: With the knowledge that most secondary schools have been structured into a stratified system of prestige and lower status schools (allowing differential access by pupils), there are still consistent sex differences found by curriculum subject, and within school and national testing. Caribbean Examination Council (CXC) results show that females are more likely to 'sit' the examination (60% girls, 40% boys) and girls across the Caribbean achieve better CXC results in English, history and social studies while boys achieve better in mathematics, geography and business studies (Leo Rhyme, 1989). Across Caribbean results conflict somewhat with results found in Trinidad (Kutnick and Jules, 1988; Jules and Kutnick, 1990; and Osuji, 1987). After accounting for social class these studies found:

1) girls perform better on teacher-made, within-class tests at all ages

between 8 and 16 and in all curriculum subjects even within the differentiated sciences at the fifth form -females achieving higher average scores in biology and physics and no significant difference in chemistry; and

2) girls perform better on CXC examinations across the whole range of subjects.

At the start of this project we were unsure why Trinidadian girls performed consistently better than boys throughout the age groups and across the subject range. There was a strong indication (though without statistical support) that similar results may be found in Barbados. We were also curious whether the results that showed females outperform males in school achievement in countries with universal access to primary and secondary education in the Caribbean (Trinidad and Barbados) would generalise to a country with only limited secondary places for students (St Vincent). Data in the project was obtained to provide insight into four questions:

1. the variance of within-class achievement scores by sex, especially between pupils of equal ability (as noted results of the primary school leaving examination, the Common Entrance Examination (CEE), and knowing that these results are used as the main selection criteria for entry into a system of stratified secondary schools);

2. whether differential levels of achievement remained over time, especially over the years of secondary schooling so that subject choice and performance can be related to earlier individual expression of ability or socialisation influence;

3. whether there are differential learning strategies that characterize girls and boys in schools, and whether these strategies are related to the status of their secondary school;

4. whether the quantitative Trinidadian results may be substantiated elsewhere in the Caribbean, especially in Barbados and in St Vincent.

The questions were formulated in the expectation of identifying positive educational actions that may be undertaken to facilitate and support educational efforts and staying-on rate for all pupils. This expectation would apply especially to boys, who were seen to suffer from lower academic performance than girls and who were more likely to 'drop-out' of school early. The questions were explored through a series of studies so that:

1. the variance of achievement by sex of children was explored in quantitative studies undertaken in Barbados and St Vincent;

2. differential levels of achievement (in Barbados and St Vincent) could be related to the stratified nature of schooling in these countries and/or personal background factors in the children's lives;

3. differential learning strategies and school stratification was explored in classroom case studies undertaken in Trinidad and Barbados; and

4. whether early quantitative results in Trinidad would generalise to Barbados (an island with slightly higher levels of school participation than Trinidad) and St Vincent (an island with a similar level of primary school participation as Trinidad, but a much reduced level of secondary school participation).

SOME BACKGROUND LITERATURE; setting the agenda for analysis
Current literature concerning less developed countries:

Within recent years, explorations into sex and gender differences in academic achievement have become more frequent. The range of results exemplify the need for caution when interpreting and generalising findings. Caution is most strongly linked to two aspects of the research: the use of sex and/or gender as complete or partial explanation for the differences found in the attainment performance of boys and girls in schools; and the separation between more and less affluent developing countries (especially those in the Caribbean and those in Sub-Saharan Africa).

For clarification in this report, when referring to attainments and behaviours of boys and girls in schools, we will adopt the differentiated terms used by Oakley (1981, p.41): "Sex refers to the biological division into male and female; gender to the parallel and socially unequal division into femininity and masculinity". The division in educational participation and effects between Caribbean and Sub-Saharan African countries is largely based on economic strength and the ability of the country to provide primary and secondary schools and access to these schools for all of its population.

Reviews and comparisons of research in developing countries (such as Brock and Cammish, 1997) identify that participation and attainment in education requires a complex explanation. Access to education is limited, especially in the African countries (of their comparison), due to the following factors:

Geography: the distance to school and incompleteness of educational systems in rural areas of any country;

Socio-cultural and historic attitudes: previous participation rates and models of participation in education, parental occupation and education, early marriage and primary socialisation patterns;

Health: historic sex preference for the enhancement of male opportunities linked with female dominated domestic responsibilities;

Economic: questioning who should benefit from education and who controls this decision;

Religion: the images and biases presented by the various religions as well as the educational opportunities offered by the religions;

Political: a weighing of equal opportunities for the population versus economic constraints under which any country is labouring; and

Educational: organisation and structure of schools, modes of interaction between teachers and pupils, the curriculum and curriculum materials offered to pupils.

The outcomes or effect of these factors can be seen in the enrolment number of boys and girls at the various stages in education, achievement by boys and girls generally and within specific subjects, subject selection by student, and wastage (or drop-out) of girls and boys at various stages in schooling (see Swainson, 1995 for an in-depth consideration of these issues). While the factors in Sub-Saharan Africa appear to conspire to limit the participation of females in education, the research picture of the Caribbean is very different.

A recent review by Drayton (1995) drew upon the World Bank report (1993) and educational statistics from the Organisation of Eastern Caribbean Countries (OECS). She identified that:

a. enrolment for boys and girls was very similar within primary schools, but became differentiated during the years of secondary schooling;

b. girls generally attained higher within-school and national examination results than boys although this was differentiated by subject; and

c. boys and girls tended to choose different (stereotypical) subjects in the later years of secondary schooling.

Explanation for the educational attainments of girls could not be provided by the classic biological theories (brain size and development). Rather, educational attainment was more likely to be explained by patterns of early socialisation (female responsibilities, matriarchal upbringing as well as maternal occupation and education, sex role socialisation and the debateable area of male marginalisation (Miller, 1991)), school differences (co-education versus single sex education, school organisation, teacher pupil interaction (especially the association of discipline with boys) and curriculum materials); and the social processes within which the child is engaged.

The review by Drayton introduces political explanations of educational attainment. She suggests that any consideration of academic success must include social-economic attributes of the child's family, primary socialisation in and around the home and school-based factors. The relative contribution of these forces have been accounted for in the Trinidad study by Jules and Kutnick (1990), showing

effects of parental occupation, type of school attended, religion and sex of the child. Jules and Kutnick, though, were unable to explore for interactive occurrences within the classroom.

Current literature in developed countries:

Only within recent years has it been acknowledged that boys are not achieving at the levels of girls (for example see the OFSTED/EOC report, The Gender Divide (1996)). The explanations of research results in Western countries (UK, USA, Australia for example), strongly parallel the explanations used in the developing country literature. The differences in examination attainments between males and females show that sex differences are mediated by: the level of education (females attaining higher than males through GCSE, while males 'catch up' in a number of subjects at 'A level); sex differentiation in secondary subject choices; changes in female attainments over the last three decades; male disaffection and discipline problems in school (see Murphy and Elwood, 1996 for fuller discussion).

Explanations for these differences between boys and girls have moved away from biological theories into psycho-social insights concerning patterns of socialisation and differential experiences offered to males and females, especially the experiences offered by the family home and the organisation/interactions of the school. These advances in explanation have been derived from two types of methodological approach to the study of achievement within schools: large sample, multivariate studies and small sample, qualitative studies. The large sample studies question whether the differences between the attainments of boys and girls are simply based upon sex differences. These studies show that explanations for attainments must account for experiences in the home (occupation and education of mother and father, socialisation patterns) and other

experiences in the child's life (type of school attended, quality of interaction within school, friendships). More intensive, qualitative studies show that distinct 'educational' experiences are offered to boys and girls within the confines of cultures and subcultures. Experiences may appear as simple as different books for reading, described by Murphy and Elwood (1996); but these experiences have been linked to pupils' later writing style and the way that information is expected to be provided and assessed in examinations. Verbal and nonverbal interactions between pupil and teacher provides further evidence of differential experiences and participation in the learning process of the classroom (Lafrance, 1991) and disaffection from schooling (Davies and Bramber, 1995). These studies provide a number of points for consideration. Among the points are: what is the relative weighting of the various contributing factors to attainment; if there are similarities and fluidity between the performances of males and females, how can psycho-social experiences be so different; what role does the organisation and structure of the school play in the differentiation of experience for pupils; and, are reading and discipline really key factors in eventual attainment of pupils? A final and substantive point is made by Mahony (1997). In identifying that gendered models of educational attainment are reductionist and simplistic, Mahony questions why so much interest is currently being focused on male underachievement. From a developing country view, underachievement in education represents a threat to national development. Mahony forces a further consideration that the focus on male underachievement may also represent the rebirth of the 'competitive state' in which old power elites re-assert themselves and challenge the accomplishments of equal opportunities that have been painstakingly established (especially by women, minorities and disadvantaged) over the last two decades.

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2. Secondary school classrooms in Trinidad

BACKGROUND:

The following chapter focuses on whether there are differential learning strategies and opportunities for boys and girls found at the classroom level and whether these strategies and opportunities are related to the status of their secondary schools. The report is presented in basic themes derived from an analysis of classroom observation transcripts of the Trinidad school experience offered to boys and girls. This chapter was based on a previously obtained quantitative assessment of school achievement in Trinidad and the need to develop insights into qualitative and longitudinal classroom processes.

The information collected represents a focused observational and comparative approach using ethnographic techniques to note classroom strategies and interactions. The information is based on case studies of children and their teachers in class. These case studies focused on secondary schools only and explored classroom learning strategies among boys and girls, in high and low status schools, across a range of subjects (English, social studies, sciences, mathematics) and at distinct age groups. Permission was sought to undertake the study from the Ministry of Education (Republic of Trinidad and Tobago). Upon gaining permission from the Ministry, particular schools were identified and approached for their willingness to participate. Names of schools, teachers and students are suitably disguised such that their confidentiality is maintained.

Secondary schools selected to participate in the study represented extremes of high status 7-year and lower status junior secondary and senior comprehensive schools that characterise the stratified educational system in Trinidad and Tobago. Virtually all secondary schools in Trinidad and Tobago are government funded. The types of secondary schools vary in a hierarchical fashion from prestige 7-year schools (which include First through Sixth Form) to prestige 5-year schools (First through Fifth Form) to junior secondary schools (First through Third Form) and senior comprehensive schools (Fourth through Sixth Form). Classes were observed over a period from May to the following March and included the transition from First to Second Forms in the

prestige and junior secondary schools, and the transfer from Third to Fourth Forms in the prestige school and Fourth Form only in the senior comprehensive school. These groups provide a range of student experience from the newly acclimatised to those familiar with their school. Observations did not interfere with the Caribbean Examination Council (CXC) Examination preparation. With the cooperation of the University of the West Indies, the Ministry of Education and schools, information was obtained including:

a) Common Entrance Examination (CEE) Scores: a national examination given to all children at the end of primary school. Results are used as the main selection criteria for entry into particular secondary schools.

b) within-class performance: at the end of each term, students are examined in each subject using teacher-made tests. These tests provide information that ranks the child in class and informs the child of any progress.

c) student behaviour, interaction and social competence in class.

A DESCRIPTION OF THE SCHOOLS:

JUNIOR SECONDARY SCHOOL A, FORM One/Two:

This school was typical of junior secondary schools, the type of government school that most children attend upon passing their CEE. The school provided education in Forms One through Three for children who were not accepted into or did not desire to go to the prestige 5-year or 7-year secondary schools. A Form One class was randomly selected for observation. The average CEE score for the class was 98.7, ranging from 62 at the lowest to 128 at the highest. The lowest and highest scores were found among the girls. Although there was a difference in average scores between boys and girls (boys = 97, girls = 100), this difference was not significant. School A is located in an urban area outside the capital (Port-of-Spain).

PRESTIGE SCHOOL B, FORM One/Two:

The 7-year prestige school selected was a government secondary school. The student population was coeducational and the school drew students from a similar catchment area as School A. As School B was a 7-year school, students were admitted on the basis of high scoring levels on their CEE. A Form One class was randomly selected for observation. The average CEE score for School B Form One students was 154.49 with a minimum score of 138 and maximum of 168. CEE scores were significantly higher than those of students in School A ($F_{1,71}= 401.345$, $p<.0001$) in School B. Quantitative

measures showed no significant difference between CEE scores of boys and girls (male average = 155.41, female average = 153.61).

PRESTIGE SCHOOL B, FORM Three/Four:

Within the 7-year school a Form Three moving to Form Four mixed ability class was randomly selected for observation. This class, like the Form One to Two class, had all passed the CEE with good scores. The class CEE average was 159.6, and there was no difference between the average male and female scores: male average = 159.35, female average = 159.93.

SENIOR SECONDARY SCHOOL C, FORM Four:

School C was a government funded Senior Comprehensive School in the same geographic location as School A, the Junior Secondary. The main student intake was from junior secondary schools, thus the CEE profile was expected to be lower than the profile generated by students at the same form level but attending 5 year and 7 year schools. Due to constraints imposed on the schedule for observations, this school was only observed in the September term. At this time, the students had recently arrived from a number of junior secondary schools, and there were no previous classroom examination results to assess the levels of attainment for the boys and girls. The class observed was randomly selected from among the Form Four mixed ability classes. The class contained an imbalance between males and females; 8 males to 29 females. This imbalance statistic may be telling of the male drop-out from the upper forms of secondary education. A comparison of the CEE results showed no significant difference between males and females; the male average was 103 and the female average was 108.7.

TECHNIQUES USED FOR OBSERVATION:

A researcher with previous experience of classroom observation and recording was employed as the secondary school researcher. Before beginning the case studies, she was provided with further training in naturalistic field note recording and ethnographic techniques of reflection and progressive focusing. Upon agreement with the three secondary schools, the researcher was introduced to each of the selected classes. The researcher stayed and recorded events in each class for all teaching sessions in the core subjects (English, mathematics, science) and social studies. Each class was recorded over a three week period. The researcher then moved to the next school/class for recording. Once the recordings were made in all four classes, the researcher returned to the first class and began the cycle of recording again.

THE DATA:

Initial analysis of the data identified broad categories or 'groupings' within which the observations could be analyzed and discussed:

1. teacher behaviours - general classroom interaction with students, quality of contacts with children and any preferences expressed in working with the children;

2. student behaviours - actions of particular children (whether of high, medium or low classroom attainment as measured on end-of-term examinations in each curriculum subject), interactions between children, children's reflections on their classrooms;

3. classroom management strategies - practices undertaken by teachers for control of the children through seating patterns, responses to misbehaviour; and

4. teaching and learning strategies - practices employed by teachers to promote, support and develop learning by the children, observations also focus on effective communication between teacher and children.

Reported below is a summary of the observations, which are annotated and identified by school and class level. Implications derived from classroom observations are listed at the end of the section on Trinidad secondary schools. In the report, all of the schools and teachers are renamed for confidentiality. For convenience of reporting, only the first names of the children are used. All indented portions of the text represent either direct quotations noted by the researcher or reflective summaries of observations made by the researcher.

ANNOTATED SUMMARY POINTS:

The summary points are a listing of key findings with the major analytic groupings used in the text. *1. In each of the classes observed, CEE scores were nearly equal for boys and girls, but within class attainment scores showed significantly higher grades for girls.* In School A (the junior secondary school) Form One within-class attainment scores allowed a distribution into high, medium and low performing students (Table 2.1) and show girls performing better than boys.

Table 2.1: Within-class attainment places of boys and girls in school A__

SEX	ATTAINMENT	Row Total

	high	medium	low	
male	3	6	12	21 51.2%
female	10	8	2	20 48.8%
Column Total	13 31.7%	14 34.1%	14 34.1%	41 100.0%

This difference in performance between males and females was significant (Z^2 (df=2)=l 1.18, p<0.004). Similarly, at School B (the 7-year prestige school) Form Three, there was no significant difference in CEE scores among boys and girls but within-class attainment showed differences (see Table 2.2).

Table 2.2: Sex by Within-Class Attainment Level in School B Form Three

SEX	ATTAINMENT			Row Total
	high	medium	low	
male	1	9	7	17 47.2%
female	11	6	2	19 52.8%
Column Total	12 33.3%	15 41.7%	9 25.0%	36 100.0%

Again, the girls attained significantly higher than boys on within-class tests (X^2 (df=2)=l 1.636, p<.003). These differences between Common Entrance Examination scores and within class attainment for boys and girls were found in all four classes observed. The differences confirmed the need to explore actual classroom activity in the attempt to explain why girls performed so much better as they progressed through school and differences between approaches and strategies for boys and girls in school.

Teacher Behaviour:

2. *Teachers clearly desired well ordered and self-controlled classes where students would act as autonomous, self-motivated learners - but there were many instances where the procedures that would lead to self control and learning were ambiguous for the students.* In these ambiguous instances teachers were likely to show a preference for the involvement of girls in teaching and learning practices.

The School A form teacher clearly laid out expectations for her students. At the beginning of the September term, students were told that they must do their homework to reinforce their learning, ask and answer questions in class, and organise their time for homework.

While other teachers provided similar statements of concern about student involvement, actual classroom practice showed that teachers were more interested in some students than others. Teacher attitudes toward learning and student development were supportive as long as students listened to statements made by their teachers. Yet, teachers chose girls to participate with greater frequency than boys. Teachers were more likely to give positive and supportive feedback to girls than boys. And, teachers were less likely to notice or take actions with regard to misbehaviour by girls than boys. These 'preferences' were found in subtle ways, expressed in statements like: "Somebody read please, someone with a good voice", and only girls were chosen. More overtly, when students did not complete their homework, girls were less likely to be given a punishment than boys (who were told off or sent to the Principal's office).

Sometimes the preference for girls was combined with controlling boys:

> When the teacher was finished taking the register, she asked Toni to return to the staff-room with her. Ms F wanted to give Toni an assignment which the students would be required to do. She said that Toni would be responsible for giving the students the assignment and also for getting the written work back to her.
>
> Joshua
> Why are you giving Toni?
>
> T
> Because she is smart and responsible, unlike you.
>
> The students began to laugh.

Differential punishments were used for boys and girls in the same situation:

> Both Muhammed and Kerwin were put outside for not having their notebooks. Krystal also did not have her notebook;
>
> T
> Krystal, where is your notebook darling? (Researcher: I did not hear Krystal's response, after which the teacher said "O.K.")

T
Jason, Kern, where are your notebooks?
Jason, Kern don't have it.

T
Outside.

While walking around the class, the teacher noticed that Hadassah also did not have her notebook but she did not put her outside.

Girls received more feedback and were provided with higher expectations for their efforts than boys. The French teacher (School B - Form One) read out class scores on a recent quiz in which girls, generally, performed better than the boys. The highest performing boy was not expected to perform as well as most of the girls:

Ms X told the students that she expected more girls to obtain scores in the 90's(percentile). She told Tremayne (the top attaining male in the class) that he was wasting his intelligence and that she did not want him to score less than 80%.

In School B - Form Three a number of boys actually questioned the teacher's comments about the performance of the girls. The researcher summarised a classroom discussion that took place after a question and answer session in Physics (both boys and girls participated):

The teacher said that she was very impressed with the answers from the female students. She commented that their answers were accurate and precise. The male students protested saying that the female students crammed the definitions from the text book while they (males) tried to write their answers from their understanding of what was taught in class.

Boys, especially low attaining boys, were often told of their poor performance and misbehaviour in a way that the whole class could hear (again, School B - Form One):

T

Now students listen, on Tuesday another teacher will be coming to stay with you all, so Joshua please try and act civilised.

The students laughed.

In a mathematics lesson:

> Mr. Y then called Muhammed and Joshua to solve two problems on the board. When they answered incorrectly the boys were made to look foolish and 'put down' in front of the whole class:
>
> T
> Bandits! Bandits! Look at that monstrosity on the board. But one thing is for sure, you are not going to waste my time. You see, bandits, I will deal with you. I will seek you out and deal with you.

There were a number of examples of male non-participation in the class. If boys didn't participate and they were quiet (eg. head on desk) they were ignored. If boys overtly refused to participate (ex. were caught talking and off task) they were dealt with by being made to stand, being 'shamed' in front of the class, or being sent out of the room. There were no examples of girls being dealt with in this manner.

3. All classrooms demonstrated a set of rules for interaction, respect and learning, yet most of these rules were not on 'display'. Students were not invited to participate in the generation of these rules. When rules were not clearly laid out and applied, the ambiguous space created allowed teachers to use the rules differently with different students, especially seen in differential punishments given to boys and girls.

Because the observations began two-thirds of the way through the school year, we could not expect to find the teachers negotiating boundaries between themselves and their students. Yet, there was no evidence of the listing of rules for students to refer. Most of the school rules found in practice related to entering and exiting classrooms, raising one's hand and waiting to be called upon by the teacher and concentrating on work in the classroom. The existence of the rules was found when they were transgressed:

> After lunch, the School B - Form One teacher Mr. H came to take the register for the afternoon. When he entered the class he signalled for the students who were queued outside to enter the classroom. When the students entered the classroom they sat. Mr. H told the students to return outside. When the students were told to come into the classroom they all sat once again. This procedure occurred twice again. The third time Muhammed (low attaining, male) said, "You all remain standing". When the students entered and remained standing Mr. H told them never to let that situation occur again. He told them that they must learn to have respect for authority.

Observations showed boundaries were limited to control of behaviour (mainly speaking

without permission), completion ofclasswork and submission of homework. Students (School B - Form Three) even took responsibility for reminding their classmates about school rules:

> A male student arrived late to class. He walked into the classroom without acknowledging anyone. Another male student shouted, "You have no manners boy, you did not even tell the lady, 'Good Morning'"! The teacher continued teaching.

Teacher rebukes in School B tended to be polite, rather than threatening:

While Abrahim was speaking noisily in class.

> T
> Abrahim, please listen in my class.

Teachers in School B were firm during the few incidents of confrontation:

> T
> Look at your textbook for a definition of moment. Where is your book?
>
> Jerome
> I believe it is home.
>
> T
> Why is it home? So what are you going to do?
>
> Jerome
> Listen, Miss.
>
> T
> And you find that good enough?
>
> Jerome
> Yes, Miss.
>
> T
> It does not make a difference?
>
> Jerome
> No, Miss.

T
You cannot determine what is good enough for my class.

Teachers also maintained authority through homework setting:

The bell rang. The teacher then proceeded to give home lesson. The students asked her not to do so, but she gave anyway. The students complain that they were given too much home work.

At the start of a new school year (and at the start of a new school (School C - Form Four)), rules were more clearly laid out for school work and control of behaviour:

The English teacher gave clear instructions for behaviour and expectations for academic work. She asked the students to stand and say their names. When all the students did so she told them that the only name which she remembered was Rishi (female).

T
From tomorrow I want you to walk with your text books everyday. You must also have two English copybooks. Tests are to be done on single sheets, O.K:? Do you want an explanation why? I think you need one. The copybooks will be a continuous record to take to Form Five and so you will have all your information when you need to study for your CXC exams. You must also walk with your dictionary. All those without dictionaries, raise your hand high. (Most students did.) Dictionaries are very important tools to enhance your English.

The Social Studies teacher encouraged the students to maintain a clean classroom. She told them that Room 23 was their classroom and that they were responsible for keeping it clean. Regarding studying:

T
Ask me any questions, I'm not going to 'boff you. Do I look like I •boff?

Neil
Yes.

The class laughs.

The teacher encourages the students to study and not waste time. She tells them about the **CXC** examination; both Basic and General (3 essays, 2 short answers and 60

multiple choice.)

> T
> Just remember, I'm here to guide and correct you. And with regard to sex stereotypes:

> T
> Let's talk about discipline. Shoes, socks, no tight skirts. We have more problems with the female students and the uniform. Girls with tight skirts. Now girls, it's a mating game going on with you. You feel by having your skirts tight you can out do the other girls. But boys in the school would not be looking at you because they are at a different level. The older men outside would be looking and then you would be in danger.

4. Observations showed many instances when the teacher was not present in the classroom. Reasons for teachers not being with a class included being called to a meeting or simply not arriving in class for the start of the teaching session. Some teachers did not arrive in class at all! The instances when the teacher was not present in class we refer to as 'teacher-less time'. With some teachers teacher-less time appeared with greater frequency and often resulted in unplanned classroom time for the students. Student reaction to this unplanned classroom time was different for boys and girls. Boys tended to use the time to avoid school work. Girls undertook a combination of school and non-school activity.

In School **C,** teacher-less time was noted on a number of occasions. The English teacher was late for the first class of the year. m the next class, science, the teacher arrived late and spent so long taking the students' names for her list that the class was forced to remain in the room- for part of their break. On the third day in school, the form teacher arrived late, took the register and left after five minutes. The English teacher did not come to class! On the fourth day:

> The English teacher came to inform the students that she does not have them first period on a Wednesday and that the timetable is wrong. The students were also told that she would not be present today because she had to go to the Ministry of Education. She told them to do the first unit from their English textbooks; a comprehension passage. She instructed them to write the words they did not know and answer the questions. The students are very quiet awaiting the arrival of the social studies teacher.

Observations in School A showed that many teachers arrived late and some did not come to class at all. A few teachers prepared for this time by pre-assigning work for the

students. Class prefects were expected to maintain discipline and ensure that classwork was undertaken while the teacher was away. Many of the teacher-less incidents, though, were unplanned and students were left to their own devices. On their own and without assigned work, different classroom strategies between boys and girls were exaggerated. Many of the girls would read, do homework or maintain quiet conversations among themselves. Boys tended to ignore school tasks or reading, converse among themselves, tease themselves or girls and some left the room. Some examples include:

> Bell rang at 7.25 a.m. Students proceeded to Form classroom. Boys entered the classroom before the girls. The girls sat on the right of the classroom. Melissa and Dianne entered the class together and so did Esterline and Denise. The class is very noisy and unruly. Chewing (gum) is quite prevalent although this is not allowed in the school. Esterline is the only student reading at this time. The Form teacher did not come. Bell rang at 7.40 a.m. and the students proceeded to maths class. Melissa and Dianne are reading one book. Karen is finishing homework for another class. Some girls who are seated in the middle of the class are quite idle (except Coleen). Colin and Alvin are having a conversation about music. Alvin told Colin that his mother does not like 'dub' music. Colin told Alvin that he likes only Indian music. Alvin said that it is not so and he tries desperately to convince Colin. Melanie is in the front desk with her head on the desk; she is very much alone. (She did not attend school yesterday.) Akil, Kinya, and Damian (all males) are spraying themselves with a very sweet cologne. They then approach the other males in the class for them to smell it. Coleen is doing homework. Kesta is conversing with Melissa. Dianne, Esterline and Denise are conversing together.

and in a slightly different example:

> The students thought that Ms A was absent. Melissa, Denise, Rer and Coleen are playing cards. The students are noisy and the male students are leaving the classroom. The teacher arrived 15 minutes late....
>
> On the following day the teacher spoke to the students about their behaviour the previous day. She said that she was away because she had a meeting to attend. She said that she had seen them from where the meeting was taking place and that their behaviour was atrocious. She noticed that students were constantly leaving the classroom and a lot of noise was coming from that particular classroom. She said that when she returned to the classroom at the end of the period books which were on her desk were on the floor, two chairs were broken, paper was on the floor and the classroom was in a mess. She asked the Prefect to give her

the names of the students who caused all the destruction.

The researcher noted that there were very few incidents of teacher-less time in prestige School B, and speculated that mere teacher presence allowed academic work to proceed uninterrupted and students were not allowed the opportunity to misbehave. The students disliked teacher-less time. In School C they complained: "the English teacher is always absent and the science teacher is always late".

5. *Teacher interaction with students showed a variety of behaviours in addition to the control and female preference cited above.* The predominant teaching style of question and answer allowed for praise and support, although this focused on students who were able to provide the correct answer. Students who were unable to answer were likely to be met with no response and, sometimes, sarcasm.

In School A teachers consistently gave positive responses to those students who answered questions correctly. Students that could not answer or answered incorrectly were quickly 'told *off*. Non-participation was ignored by the teacher. These students were not provided with positive means to solve the problem or answer the question:

T
What is the purpose of the Nursery Shed? Christopher! You have a text book, did you try to read about the Nursery Shed?

Chris
No.

T
Damian

Damian
Yes, sir?

T
Karen

Karen
To protect the plant.

T
We said it is to protect the small seed that we grow. Apparently you all can't read and understand.

When the students were not able to answer, teachers took little or no responsibility for helping to find the answer. One teacher shifted the cause of poor learning and behaviour solely onto her students, telling the researcher:

> 1.8 was an unstable class. She said that usually the students who got late call would be put in this class. She also said that she felt that the findings of the research would be different if 1.1 or 1.2 were being observed.

On the other hand, some teachers in the junior secondary school and the senior comprehensive school went beyond normal teaching and learning practices to establish themselves with the students. The Social Studies teacher in School C told students that she was the product of junior secondary and senior comprehensive schooling:

> But one thing I realise is that most of you come from (School A) Junior Secondary. I went to (School A) Junior Secondary and then I came to (School C) Senior Comprehensive. She also tells the class about school clubs and activities, encouraging as many students to participate, make the school theirs, and 'make it come alive'.

Students, though, found little reason to respect teachers who did not show respect to them. hi a Guidance class half-way through the term the teacher showed his disinterest in the students:

> Mr. A is sitting in front of the class while the students are conversing with one another. Mr. A makes no effort to discipline the students. Jaime, Carla, Stacy and Arlette are talking about fashion and hair styles. Nickelle and Jeremy are harassing Melanie, while she is conversing with Josian and Christal. Natasha and Dixie are studying. Wendy, Melissa, Ayanna and Krista are conversing. In an interview after the class, all the students agree that the teachers at School C are not "good" teachers and that they do not motivate the students. They agree that teachers at their respective junior secondary school were much better.

Students did not find their teachers consistent about their development and learning. Praise was appreciated, but was mainly given to high attaining students. Some teachers made the effort to empathise and support their students, but many others used sarcasm and telling-off to control both behaviour and efforts towards learning.

Student Behaviour:

6. Authority among students was asserted within the class through the prefect system. Prefects were chosen on academic performance, often accentuating the male-female

difference, hi all schools the prefects were females (ex. in School B - Form One, the prefect was the top performing girl in class). Prefects were expected to control the class during teacher-less time, and this often brought the prefect into conflict with male students, especially low attaining males:

> Today the class prefect, Nneka, complained to Ms N that she was unable to control the class. Ms N came to the classroom and asked Nneka to tell her exactly what was the problem. Nneka said that the students are very noisy and when she tells them to be quiet they don't listen to her. Ms N explained to the students that she chose Nneka to be the class prefect because she thought she was a responsible and efficient individual, capable of 'doing the job'. Ms N asked her if there were specific troublemakers in the class or if all the students in the class were responsible for the confusion. After some hesitation Nneka said that the class in general do not listen to her, but that the main 'culprits' were Joshua and Muhammed. Ms N then said that she knew that they were the troublemakers. She asked both Joshua and Muhammed to stand to the front of the class...

In the Form Three class of School B, the same scenario occurred. Even assigning boys and girls to work together did not stop boys being upset by the authority of girls (especially the authority of the prefect during teacher-less time):

> Akil was knocking the desk with his pen. Jaime (prefect) asked him to stop but he continued. He finally stopped when she ignored him. (A little later)... Akil is calling another student on the other side of the class and Jaime calls his name. He gets upset and swears softly.

The conflict between males and females, students and prefects was even more strongly pronounced in another incident in the same class:

> The teacher did not come for Physics hence the students had two free periods. When the students realised this they became very excited and noisy. The head-boy (of the school) came to speak to them about the noise. John, Akil, Amir, Matthew, and Dominic are considered the 'bad boys' of the class. Jaime (the Prefect) tells Matthew to go outside; he told her no. She also told Akil to go outside but he said that he was not going anywhere... The students were still very noisy and Jaime could not control them. The Head-boy came to speak to the students about the noise; five minutes after he left the Vice Principal also came to the class to speak to them about their behaviour. When the Vice Principal left the class was still very noisy. The Head-boy returned to the class. He told the

> students that he is going to stay with them because they have no behaviour. The class is somewhat quieter while the Head-boy was present.

The boys misbehaving represented all levels of attainment.

7. *Misbehaviour within the classroom included non-completion of work and breaking school rules. Misbehaviour was found among boys and girls but boys were more frequently 'found out'*. Misbehaviour and non-work in the classroom was especially evident during teacher-less time.

In School A, boys were less attentive in class than girls when the teacher was present and during teacher-less times. Boys were more likely to be disobedient (gum chewing in class and talking back to the teacher). Boys were more likely to enter class late, be noisy upon entry, and be the first to leave the classroom at the end of a lesson. In teacher-less time, boys tended to converse about non-school subjects rather than read or study. These conversations included boys from the full attainment range; the higher attaining boys preferred to socialise with other boys than focus on their studies. Christopher, the lowest attaining boy, did not concentrate or work in class, did not socialise with others, and often sucked his thumb. One time, Christopher had his hand 'wrapped' and complained that it was so sore that he could not do his homework. His teacher told him: "he was wasting his time to come to school". Boys also displayed poor reading skills. Often, when asked to read to the class, they were stopped and criticised. Girls, as identified earlier, were more frequently chosen for classroom readings.

School B showed a similar pattern among boys and misbehaviour, but qualified the findings. Not all boys misbehaved or did not do their homework. The two lowest attaining boys represented approximately half of the incidents mentioned. Boys were more likely to receive punishments (12 incidents which involved boys, none involving girls) and were more likely to be involved in cheating incidents.

8. Boys and girls did not interact together unless directed to by their teacher. When seating was left to student choice, boys and girls sat separately. There were no examples of boys helping girls, but a number of examples of girls helping boys with homework, classwork and sharing responsibility for misbehaviour in the classroom. Girls frequently showed a solidarity among themselves. Solidarity was found in studying together, cliques and supporting others (academically and socially). Girls did not tease each other. Boys did not display these cooperative social supports.

Most of the teachers in the three schools allowed students to sit where they wished. This seating option produced a physical segregation between boys and girls. School C

provides just one example. The boys chose the seats away from girls and where the teacher was least likely to notice them:

> Ms B, the Science teacher is always late. There is no specific seating arrangement; for this class all the male students sit at the back of the class.

Boys rarely interacted with girls in class. When interactions took place, they were usually at a non-academic level. Teasing was most typical of boy-girl interaction. In School B - Form One, girls often bore the brunt of teasing and bullying by the boys. These incidents coincided with offers of help and solidarity between girls:

> Joshua and Krystal began to argue. When Joshua left the classroom, Krystal began to cry. Toni told her that she must learn to be strong and ignore Joshua.

In School **C,** one of the teachers had asked boys and girls to work together. Boys still teased girls in class. During break another type of teasing took place:

> Amir moved to where Natalie was sitting. He started to do something which was irritating her and she asked him to stop. He asked her not to be angry with him because she is the only person in the class whom he can harass.

While the main focus of teasing by boys was onto girls, there were a number of incidents in which boys teased other boys:

> John told Alfrena that Matthew likes her. Matthew screamed at John and denied what John had said.

While girls bore the brunt of the boys' teasing, they did not express resentment in the form of avoiding all contact with boys. Girls took on a responsible approach towards their classmates. The researcher noted a conversation with girls in School B - Form One:

> I explained the nature of the study and they all agreed that girls perform better than boys in the classroom. They further explained that most of the boys in their class were intelligent but lazy and that they (the girls) try to assist them whenever possible. The girls also said that when the boys are in trouble with the teachers, they try to cover for them... One low attaining boy, Michael, had many problems at home and did not come to school often. When he did attend school, his homework was not done and

> the girls allowed him to copy their work.

Boys, especially those in School B - Form Three, identified that girls had a different (more responsible) approach to the classroom (as previously noted). In this class, girls were the students who read or did school work during teacher-less time. Girls tended to sit near the front of the room, where the teacher was positioned. And, while girls participated more consistently in class than boys, when they 'opted-out' of participation they were less likely to be noticed or punished by the teacher:

> After sending one boy out of the class... Akil's head is on the desk. The teacher hits him with a piece of paper on his head. The students are not interested in this class. Later in the day... Jeanette (lowest attaining girl in the class) has her head on the desk. She does not participate in her classes.

Girls did not undertake school work and studying on their own. In each of the classes observed, groups of girls often came together for social support as well as academic sharing of school work. The best described of these groups took place in School B - Form One. The researcher stated:

> During this 15 minute period I went to check on the female students. The Home Economics teacher was not present because she was attending a staff meeting. The female students are in their form classroom. The students of East Indian descent are all doing school assignments together. Dana and Suzette are doing English homework. Melanie is alone reading. The other students are conversing about the group which they formed; SAS - Single Average Sisters. They are discussing the rules under which all members must conform: -
> - Everything discussed must remain within the group.
> - If any member has a problem they must first seek help within the group.
> - No member must bad-mouth another member of the group.

The SAS's solidarity provided social support and the girls shared information for school work as well. This group had to be 'officially' dismantled because other members of the class thought it may have been based on racial lines (there were rumours that SAS meant Single African Sisters). When it was dismantled, its members told the researcher:

> Toni explained that 'Average' was used because the members did not want to be vain and label themselves as brilliant. On the other hand they know that they are not dull. Krystal explained that the dismantling of the group was a disadvantage to her because the group was basically a study group and that the members were support systems when needed. She also

> said that the group members ensured that homework was done on time, something she was not able to accomplish on her own. The SAS group members are very disappointed because they feel that they were not given an opportunity to voice their opinion.

In School A, a similar group had formed. Girls maintained an unspoken solidarity among themselves. They shared information and work with one another as well as their lunch and gossip. The 'Cool Group' of high and middle attaining girls was often found talking and sharing information during teacher-less time.

9. Low attaining boys frequently received negative attention from classmates and teachers, this was also characteristic of low attaining girls (to a lesser extent). This attention was not focused on all low attainers, it tended to be focused on just a few students. Low attaining students displayed poor basic school skills (such as reading) and poor social skills. Particularly among boys, evidence has been provided showing poor reading (especially reading aloud) skills. These boys, also, did not show care or concern for classmates. They were responsible for class punishments and often teased their classmates.

In a previous incident reported with regard to the role of the prefect in School B - Form One, the teacher discussed the behaviour of the students with the whole class:

> Aisha then told Ms N that she did not think that it was fair to blame only Joshua and Muhammed because the whole class was responsible for the noise making. Hansa then responded by saying that the class is always noisy because Joshua and Muhammed are always harassing the students. Ms N then turned to Joshua and Muhammed and asked them if they were hearing what their classmates were saying about them. Joshua was then about to say something but Ms N said that she did not want to hear anything; she had heard enough. She told both boys that she never wanted to hear any complaints about them again, and that if she ever did, she would take them both to the Dean's office to be flogged. She told them that she was tired of their behaviour and conduct and that they needed to take control of themselves. She also told them that during class time they must not leave their seats or harass the other students. She told the other students that they must not hesitate to come to her if they ever needed to talk to her or complain about these two students. Before she left the classroom she stressed to the two boys that she was completely fed-up with them and that she would be watching them closely. Neither Joshua nor Muhammed behaved as though they were embarrassed. When Ms N left the classroom they both returned to their respective seats.

In the same class, the low attaining boys were the students most critical of their teachers, often in contrast to girls' views of the same teacher:

> Before the teacher arrived the students were telling me that they did not like mathematics. Michael and Joshua said that they thought that Mr F was a 'nerd'. Toni said that she did not feel that way but instead she thought that Mr F was "a very warm and responsible teacher, who is dedicated to his job".

Low attainment was tied to disrespect for the teacher and the subject as well. In School C during a science lesson:

> Ms. B is writing the lesson on the board. Nick isn't writing while Dale says he would only write what he thinks is important. He stated that Ohm's Law is not important because it is only the opinion of one man named Ohm. The male students are conversing and laughing among themselves at the back of the class. The teacher does not respond.

Some low attaining girls in the class were as disinterested in schooling as the boys. Not all girls were interested in using school to support learning, and several girls told the researcher of events in their lives that may inhibit their desire to learn. Treneiceia said that she didn't "view school as a learning institution instead she sees it as a place to socialise and make friends". Another girl spent much of the teacher-less time arranging her hair. She told the researcher that she had no interest in school and that she wanted to be a hairdresser when she left school.

When the researcher approached a low attaining girl in School A, the student simply appeared to 'opt out'of class:

> During the break, all the students went outside except Melanie. I asked her how were her results. She did not answer. I also asked her why she arrived to school so late. She said that she had something to do before she came to school. I told her I realised that she misses school quite often and asked why. She looked at me and walked outside.

This section stresses that low attaining boys and girls find ways not to participate in class. When tied to point 7 above, readers will note that the non-participation of girls was usually undertaken in a quiet way that did not draw attention to themselves. Boys, on the other hand, were often vocal in their opting out and were given punishments (or made example of) in front of the class.

10. High attaining boys were not like high attaining girls in their interaction with

others. They tended not to have other high attaining male colleagues to interact with and were found to display some of the same behaviours as the low attaining boys (non-completion of homework, talking back to the teacher). In School B - Form One, the highest attaining student was a boy. As the only boy in the high attaining group in class, his behaviour did not support his academic position. He rarely made efforts to answer the teacher. He spent most of his time with middle and low attaining boys (he had no alternative; if he interacted with males only, they had to be in the middle or low attaining group). He was caught by the teacher chewing gum numerous times and was known among the girls as a troublemaker.

11. The new school year appears to be a crucial point for low attaining students to make a renewed effort to succeed. These efforts are likely to be met with overenthusiasm by teachers and reassertion of the negative reputation that they had gained in the past. As an example, at the start of the September term Muhammed (low attainer in School B - Form One) began to volunteer. He gave a good reading of Macbeth in English and was applauded by the class. He was also applauded for his efforts in Spanish. Shortly after, though, he was seen misbehaving in the corridor by the Vice Principal. As the Vice Principal was about to make a school-wide announcement on the public address system, she warned Muhammed that his behaviour would not be tolerated within the same announcement. An embarrassed Muhammed withdrew from further classroom participation. He criticised the Vice Principal and returned to his anti-social and disruptive ways.

Classroom management:

12. Most classrooms were run in a traditional fashion, with the teacher at the front of the room. The traditional teaching style, combined with few examples of assigned seating for the students, allowed low attaining and disinterested students to gravitate towards the back of the room (away from teacher attention) and for sex segregation. Seating boys next to girls was used as a 'punishment' for misbehaving boys.

Seating of students in class was indicative of the problems and possibilities encountered during the observations. Teachers did not assign seats in most of the classes observed. In School A, students were left to their own preferences and opted for segregated seating by sex (males away from females) and by attainment (higher attaining students sitting toward the front and centre of the classrooms). Teachers used the threat of seating a male student (usually low attaining) among females as a punishment. At the start of the September term two teachers used mixed seating by attainment and sex. Surprisingly, the students accepted this pattern and did not object to it. There was a similar non-reaction to new mixed seating in some classes at School B. Simply seating boys and girls together and high and low attainment near each other was no guarantee that they would interact or learn together.

Teachers rarely moved around the classroom, preferring to teach and work from the front of the room. From this position, they were aware of overt misbehaviour and assigned a range of punishments (as the teacher thought appropriate). In one incident of non-completion of homework in School A:

> T
> All those who did not do my homework keep standing.
>
> Kinya (male) remained standing.
>
> T
> O.K., Ayanna (female) sit down. Kinya, why didn't you do my homework?
>
> Kinya
> Miss, I don't have the book.
>
> T
> What time did you come to school this morning?
>
> Kinya
> 7.30, Miss.
>
> T
> Come to the front.
>
> Teacher pulled out a whip. Christopher sucked his teeth and remarked rudely. She told both Christopher and Kinya that she was going to flog them. Kinya received two strokes on his bottom. Christopher then bent over.

Corporal punishment was only one of the deterrents used by teachers. Detention, sending to the Principal's office, sarcastic remarks and making students stand in class for periods of time were also used. Boys were more likely to be punished, even if they presented the same inappropriate behaviour as girls (see above). Detention at the end of a lesson (to complete classwork or homework) was likely to cause further disorganisation: the students would be late for their next class. Lateness in arrival accentuated a fundamental difference between students and teachers. Teachers expected all students to be in class on time. When the teacher came to class late and had not assigned work during the teacher-less time, the students were given no apology or explanation and the class was expected to have completed all of the classwork for the lesson.

Examples of positive reinforcement by the teacher were distinctive for girls and boys. As girls were more likely to complete their homework and successfully answer questions in class, they were given small-scale reinforcement (eg 'Good', That's right', etc.). Reinforcement for boys was much more exaggerated. When one of the low attaining students made an effort and provided a correct answer the whole class was asked to applaud. As positive reinforcement for these boys, the strategy did not work well. They quickly reverted to more typical behaviour of non-participation.

To the observer, classroom life resembled a situation with few rules or responsibilities. The teacher would probably have countered this suggestion with statements such as 'the students were now grown-up and able to be responsible for themselves'. The social studies teacher in School A, who was liked by the students, told them:

> Control isn't something that we are born with, it is something that has to be developed, it comes with a great deal of discipline. This is why as young people you must learn from those around, but more important you must listen to those who are older than you are; your parents, teachers and so on. We have gone through exactly what you are going through but we have the experience and we will be able to guide you. So when you are told not to do something it is for your own good. We don't want to punish you, instead we want you to grow to be responsible individuals. All we want is what is best for you. Do you understand what I am saying? I want you to promise me that at least you would try to be more tolerant of what your elders are telling you and you must try to listen more, O.K.?

From the previously cited criticism of teachers, the students have identified a contradiction between the respect that they are told that they should have and the management realities of their lives in school.

Teaching and Learning:

13. The predominant style of teaching was didactic, question and answer sessions. For this style of teaching, students had to be prepared. If students were not prepared, they either did not participate or they did not know the answer and were likely to be embarrassed in front of the class. The didactic style only allowed use of simple reinforcement techniques to support or develop learning. This didactic mode was at odds with teacher statements about development of autonomous learning by the students.

A number of teachers exhorted their students that they must do their homework and

classwork. These exhortions provided the best example of the autonomy that teachers expected of students, and the perception that students were responsible for their own learning. The respected social studies teacher in School A told her students:

> This is all part of learning. You must be able to read and understand and think for yourselves. This is what you all are not doing. You act like children when you have school work to do but for anything else you act quite grown up. You all are wasting time and some time in the future you would regret it. You have to change your attitude or you would be sorry. I want you do to these exercises for home work and I expect a different mentality when next we meet.

Teachers expected that the teaching and learning processes of the classroom and homework would be the basis of understanding. Classroom practices offered little opportunity for autonomy or maturity. Work to be done was identified and controlled by the teacher. Teachers handled these question and answer sessions in different ways. The social studies teacher (in School C), who was liked by the students, started the year by encouraging the students to study and not waste time. She communicated high expectations to the students, especially that they should be taking the (higher level) General Examination rather than the Basic Examination in the CXC.

Some question and answer sessions were approached in a positive or negative manner with students. In School B - Form Three, the students showed greater participation because teachers: were sensitive to include all students, did not criticise incorrect answers and supportively explained concepts where necessary - sometimes forcing students to think:

> Gerald was called to write his solution on the board. Gerald said that he could not do it but the teacher told him to try. He did not know how to begin the problem. Miss R tried to assist but he was totally confused.
>
> T
> Shaka, do you want to help him?
>
> Shaka
> No, Miss.
>
> T
> Who wants to help him?
> Edward volunteered.
>
> T

> People, it makes no sense to just sit down in class and say nothing when you don't understand something. Those of you who don't understand would have to see me at sometime.

And, after an intensive question and answer session in mathematics:

> The teacher patiently explained the solution to the problem ensuring that the students understood each step of the solution.
>
> T
> Very well done. Are there any problems. Do you folly comprehend these type of problems? O.K.

Teachers also told the students of the importance of doing homework (especially with examinations coming soon):

> T
> Thank you Sheldon. People do you understand this problem? When you go home make sure you review this problem and ensure that you understand the principles involved. Remember, next day I would be checking your notes.

When the teacher was less sensitive to the needs of the students, the researcher found: rarely did all members of the class participate (some children were never mentioned in the field notes), the highest attainers were most likely to be called upon (and most likely to receive praise), and certain students could be ignored (especially low attaining boys, even if they had the correct answer) or the subject changed before they were allowed to respond. The lack of equal opportunity to respond (and hence receive praise, etc.) may not have been 'planned' by the teacher, but students received the message that creative answers were not required and certain students could 'opt out' of participation. During one period of teacher-less time, students complained to the researcher that they were unable to understand work assigned by the teacher and were unable to question the assignment, given their teacher's didactic approach.

14. As part of the didactic style, one-way communication from the teacher to the students was not effective in promoting understanding and participation. Teachers who explained more in class and who seriously asked whether (and how) students understood the topic received greater student participation and appreciation. Teaching that involved some cooperation and original contribution with the students brought about greater student involvement. Examples that increased student involvement included paired learning, the use of role play and asking for student contributions. None of these observations (that lasted through a year) showed teachers using 'cooperative

learning' techniques which required the participation of all students.

A teacher in School B - Form One was noted by the students as using a didactic teaching style, and the one-way communication confused them:

> Ms G has distributed workbooks and the students are correcting the work previously completed by other students in the class. They are very confused by what the teacher is trying to explain to them and so the exercise is not proceeding very well.

Another teacher's presentation was similarly problematic for the students:

> The students are very restless and show no interest in this class. The lesson is about the countries of the East. The teacher is talking but not communicating with the students. He told the students what pages to study for the exam. The teacher speaks very quickly and also he speaks as though he is having a conversation with himself. When a student tries to make a contribution he cuts them off. If a student asks a question he does not ensure that he is understood; he rattles on and on.

An alternate example which appeared to promote learning through student involvement took place in mathematics:

> Teacher arrived at 8.30. Today he would be teaching statistics. He explained to the class that statistics is a topic which confuses most students. Because of this, he has decided to use a more practical method for teaching this lesson. He would begin by using the students' birthdays. The teacher wrote the months of the year on the board in 12 columns. Then he asked each student which was their birth month. As each student called his/her birth month, he gave a stroke in the column of the relevant month. When the exercise was over he explained what was accomplished. He explained the strokes made in each column was a tally and that the total amount of students who were bom in each month could be obtained by counting the strokes. (Michael is the only student who was bom in the month of June and the other students teased him about it.) The students said that they understood and the teacher decided to conduct another exercise.

Another way of promoting student involvement was to have students work on a topic of their own choice. Thinking and input were exemplified in a drama class where students had been asked to prepare and speak about a topic. Student topics included drugs, gambling, teenage pregnancy. This input elicited keen interest by students and no

classroom disruption.

An English teacher asked students to work in pairs to undertake a classroom exercise:

> The teacher then gave the students an exercise to do in pairs. Hansa and Tricia were the first pair of students to finish.
>
> T
> Excellent, continue with the other questions.
>
> When all the students completed the exercise she corrected the questions orally and every student had the correct answers. The teacher is very patient with the students of Form 1L. She praises her students and they enjoy her class thoroughly.

SOME IMPLICATIONS FROM THE SECONDARY SCHOOL DATA:

The summary points may be presented as a number of classroom practices shown to effect overall academic performance and participation among boys and girls.

> a. Teachers, schools and classrooms play a major role in the development of student attainment. Selection to secondary school was based on CEE results, and virtually no differences were found between the scores of males and females in each of the schools studied. Within a year of secondary schooling class attainment differences appeared between boys and girls.
>
> b. Where school and classroom rules are ambiguously applied, it appears that the boys are most likely to be criticised and punished.
>
> c. Without careful planning and directions for continued student work, teacherless-time may lead to regressive and stereotypical behaviours among students.
>
> d. If students are to act as autonomous learners within their secondary schools, they must be offered and understand the opportunities for autonomy.
>
> e. The formal interaction between teacher and student, exemplified in question and answer sessions, places a great burden on the student to 'get it right'. At the same time, students can "hide" from participation.

f. Boys have few examples of high attainment role models. The few high attaining boys in these observations tended to act and misbehave like their lower attaining classmates.

g. Lowest attaining students (mainly boys) displayed poor social skills.

h. Lowest attaining students also displayed poor basic reading skills.

i. These observations show that both boys and girls are found in the low attaining levels and need to be supported to improve their achievement in education.

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3. Primary school classrooms in Trinidad

BACKGROUND:

Based on the previous findings concerning within-class success of girls in all subjects and at primary and secondary school age levels, qualitative observations were undertaken in a range of primary schools. Five primary schools were selected as case studies. The schools provided a range of the available primary schools within one urban area. The schools were government funded and included those maintained as non-religious and religious. Parental choice of school was based on religion of the family concerned, proximity to the school, and other preferences (possibly due to previous CEE results) of one school over another. Classes were observed between May and the following April. Observations began when the children were in Standard 4 (children aged 9 to 10 years) classes and followed a majority of them as they moved to Standard 5 (the top classes in the schools). Criteria for the initial selection of classes were: one class per school, each class should include children from across the attainment range (mixed ability class) and classes should be co-educational.

THE SCHOOLS:

SCHOOL 1: PRESBYTERIAN MAINTAINED:

School 1 had a reputation within the local community for the high performance of its pupils on the Common Entrance Examination. This reputation had been built-up and maintained over a number of years.

SCHOOL 2: ROMAN CATHOLIC MAINTAINED:

Like School 1, this school was located in a densely urban area. The children attending were predominantly Roman Catholic. Because of its location, the school drew upon families where the wage earners were predominantly semi-skilled or unskilled.

SCHOOL 3: MUSLIM MAINTAINED:

As its religious orientation defined, the pupils attending School 3 were predominantly Muslim. The school was in the same general location as the other schools and had a mosque attached. Inclusion of School 3 was made in the knowledge that earlier representative research in Trinidad (Jules & Kutnick, 1990) showed only one sub-sample of students in which males achieved higher within class attainment scores than corresponding females; this sub-sample was among children who were Muslim and at Form 2 (secondary school level).

SCHOOL 4: GOVERNMENT MAINTAINED SCHOOL:

School 4, again located in the same area as the first three schools, drew children from a variety of backgrounds. This school was a non-religious maintained school and there was little to distinguish it from the other primary schools.

SCHOOL 5: ANGLICAN MAINTAINED:

School 5 was in very close proximity to School 1 (within a five minute walk). The school was government supported and maintained by the Anglican church. Pupils attending the school were of a variety of (mainly Christian) religions.

OBSERVATIONAL TECHNIQUES, INITIAL ANALYSIS OF DATA AND PRESENTATION OF RESULTS:

As described in the chapter on secondary schools, a full-time trained research officer observed in the five schools. The researcher spent approximately three weeks in each classroom and then rotated to the next school. Once observations were completed in each of the five schools, the cycle of observations was repeated.

Data from the case studies was recorded as field notes. During the recording period, initial analyses showed that the categories of Teacher Behaviour, Pupil Behaviour, Classroom Management and Teaching and Learning were relevant groupings. As the researcher continued (through progressive focusing and reflection) recording centred on classroom activities that would provide information within the analytic groupings.

Each case study was analyzed within the above analytic groupings and a number of summary points were drawn from the data. The following section reports on the major summary points. The points are illustrated by reference to particular schools and observations. All of the indented portions of text present either direct quotations noted by the researcher or reflective summaries of the observations made by the researcher. All school, teacher and pupil names are disguised to maintain confidentiality.

ANNOTATED SUMMARY POINTS:

1. *In the five classes observed, the distribution of boys and girls -was uneven.* Some classes had a higher proportion of boys to girls and in other classes there were more girls than boys. In the Standard 4 year, there were no significant differences in the attainment of boys and girls in any of the classes. In the Standard 5 year, many of the top performing boys and girls were 'streamed' off into top performing classes in many of the schools. The observations continued in mid-stream classes which now contained an influx of new boys and girls to fill the vacated positions of the top performers. With the new distribution of boys and girls in the classes, there were still no significant attainment differences between boys and girls although there were a number of actions and interactions that separated boys and girls.

Teacher Behaviour:

2. *All teachers observed maintained a didactic control of their classrooms.* Control was used with regard to knowledge and behaviour. Knowledge and behavioural control were asserted through positive and negative reinforcement. Negative reinforcement was seen most frequently.

The combination of knowledge and behavioural control were seen in the frequent question and answer sessions - the predominant teaching style in all five classroom observed. An extended example of such a session is provided from School 1 in which pupils had to raise their hands and wait to be called upon before they could answer the many teacher questions posed. When called upon by the teacher the pupil had to stand and provide the appropriate answer. There were many opportunities for feedback in these question and answer sessions, but the teacher gave little praise for correct answers. She tended to criticise incorrect answers:

> T
> Adam are you finished with number two? Close your books and sit up. Vishal tell me the number that can go into the numerator and denominator.
>
> Vishal
> 6.
>
> T
> Right (but no praise from teacher).
>
> Teacher writes on board while Vishal breaks down the answer.

T
Those who did not have 1/3 stand. (Teacher hits Alex on the shoulder)

T
Shaun stop copying both of you! (Teacher hits Andre and scolds Lorie)

Lorie
But Miss, I was not here yesterday.

T
Renaldo, what is your problem? You know that your problem is your tables!

T
Those who are finished with number two put up your hands (hands go up). Those not finished, hands up. You have one more minute.

T(to Savita)
You copy too much. You must make an effort on your own time. What factor can go into the two numbers (second question), Dale?

Dale
3.

Teacher writes answer on board as Dale breaks it down.

T (to Adam)
How did you get 4/12? 9 into 36, 4 times and 4 into 48 is twelve. (She slaps Adam.) Do it over!

T
Andre what factor can go into both 18 and 72?

Andre 6,6 into 18 is 3 and into 72 is twelve.

T
Can we go lower?

Andre
No.

T No?

Other students answer that 3 can go.

T
Savita, what can go into 12 and 60?

Savita
6 (the right answer).

T
How many times does it go into 12?

Savita
2.

T
And into 60?

Savita
(no answer)

T (loudly)
Your problem is your tables. All you like to do is sit down and copy. You must work on your own.

This quote provides a flavour of the speed of the question and answer sessions, the lack of praise for correct work and lack of help offered to pupils who have trouble with their work. Speed of questioning and need to provide the correct answer dominated the classrooms. While observing in School 3 at one point, the researcher reported: "This man is teaching so fast that I can barely get anything down!".

Children understood that there were rules to be followed in order to participate in these classes. Occasionally, a child who was eager to answer a question would shout the answer without being recognised by the teacher. Speaking out of turn usually brought a reprimand from the teacher and recognition of the misbehaviour by the class, as exemplified in School 2:

Sergio had just called out a correct answer to a mathematics problem.

T
That was good, but you didn't raise your hand.

Class
And he didn't stand up!

When children did not pay attention in class or misbehaved, teachers were quick to identify who was misbehaving. A range of punishments were threatened or used. The teacher in School 2 threatened to use a boy's own belt for corporal punishment. The teacher in School 3 used a lot of sarcasm:

T
Look at the subject of the verb and tell me what you observe. Simon?
Simon gives no answer.

T
That is why he can not answer. He is not observing anything. There is a difference between the subject on the left and right hand comer. Zaheer, can you see it?

Zaheer smiles and says no.

T
Mesad tell him.

Mesad
One side is singular and the other is plural.

T
Those that carry the verbs with's', is it singular or plural? Carlos?

Carlos
Plural.

T
You don't know, you busy rubbing your nose. (The teacher is very impatient with wrong answers and certain pupils.)

T
Let me hear Ria.

She gives no answer.

T You don't know, you're not listening at all.

If the teacher felt that a pupil was not paying attention, he had them kneel in front of the class or threatened to send them to the Principal's office. Later in the observations, the researcher made the additional comment: "I think that the teacher's impatience and sarcasm is scaring some of the children from answering".

The quotes that involved control showed that boys were most likely to have their behaviour criticised, a finding that characterised all classes. Sometimes the boys were spoken to at a general level or the child was simply referred to as 'boy' (as found in School 4:

> T
> Boy! You always show off. That behaviour is not going to land you anywhere good. You want to end up in post-primary (extended primary level education for those who fail their Common Entrance Examination)?

Other times, when a number of pupils were not paying attention, the teacher selected a boy and used him as an example to the rest of the class:

> The teacher begins to hand the books out. The class is noisy and Kareem is making a loud noise.
>
> T
> (to Kareem) You don't know me, you know. I was real pleasant today. Now this in a workplace (she is speaking very sharply)... you had a lot of maths wrong didn't you? Now sit down and do it over... Barry, you talk more than you need...

In another incident:

> Each child has their book corrected and they go back to their seats. Marvin has a ridiculous wrong answer which the teacher repeats for the whole class to hear.

The above points may not appear significant individually, but the transcripts consistently showed that the boys were used as examples of poor academic work and behaviour.

3. Most of the teachers showed a preference for working with particular pupils or particular types of pupils. Children related to the teacher received positive attention. Teachers also showed preference for working with high attaining children; girls were

often found in this grouping. Traditional practices of question and answer and correction of pupil written work allowed high attaining pupils most of the quality access to teacher time.

Within the observations, there were two children found to be related to the teachers. In School 3, Salma was the niece of the teacher and in School 4, Avion was the teacher's daughter. Whether by ability or encouragement, both of these girls were found in the very top attainment levels in their classes. They were not punished in any of the observations, and the other pupils in the class commented (to the researcher) that these children were treated preferentially.

These girls were part of the larger group of high attainers in their classes, a group that received more feedback from their teachers and the feedback was more likely to be positive. The teacher in School 1 showed a very different approach to low and high attainers in a question and answer session:

> The teacher had written five mathematics questions on the board. After ten minutes...
>
> T
> Let us correct... First question. Jason, what to do?
>
> Jason stands and tells her how to do the sum.
>
> T
> Who had it wrong stand.
>
> Andre, Ariella, Sunita, Stephen, Candice, Kavita (all mid and low attainers) had it wrong. Teacher asks each child what happened.
>
> T
> Andre, where is your working column?
>
> T
> Sunita, you know what is your problem? Tables.
>
> T (to Candice)
> I want to see your mummy. You don't know your tables. (She tells Candice that something is wrong if she can't divide by 4.)
>
> Pupils look around at Candice and the child stands and looks put off. Teacher explains the sum but reprimands Candice all the while.

T (to Kavita)
Put your work in columns and do it over... (to Stephen, she pulls his ear)
Your tables!

T
Sunita, second sum.

Sunita stands to answer.

T
Who had it wrong?

Machel (high attaining, male) stands.

T
I am sure you had a stupid mistake.

Machel
Yes, Miss.

(Researcher's note: JUST LOOK AT THE DIFFERENCE IN THE TEACHER REACTION. IT IS OBVIOUS WHO SHE BELIEVES CAPABLE AND WHO SHE DOES NOT.)

In School 2, the preference was towards the high and middle attaining pupils (both boys and girls). The teacher corrected these pupils' books more frequently than the low attaining pupils. These pupils were the first to complete and submit (to the teacher) assigned classwork. As lower attaining pupils took longer to complete work and could not be given 'corrective' feedback or positive reinforcement for good work because the teacher was already working on high attaining pupil submissions. Positive reinforcement was tangible in this class. The researched noted the following with regard to work submitted that was correct:

If they do well, the teacher marks super in their books and a large pumpkin, heart, etc..

In the same class, when low attaining children made mistakes in their classroom responses the teacher often ignored their inability to answer correctly. When a high attaining pupil was incorrect, the teacher reviewed the work for the whole class.

While girls were only part of the high attaining group in each class, it was these girls

who were focused upon as indicators for progress in class. The teacher in School 4 used high attaining girls as a measure of assessment for the capabilities of the class:

> She checks Ramona's, Avion's and Josani's book to see if the exercise was too difficult for the class. She tells this to Avion (the teacher's daughter) These appear to be the pupils that the teacher has chosen as the benchmark to assess what can and what can not be done.

Girls were acknowledged by the teacher as those who consistently performed well in class:

> T
> Why is it that you can always depend on the girls? (She points to where a group of boys are sitting and says mockingly).. Look at the hard-riding men of tomorrow!
>
> There are giggles and laughter in the class.

Preference and control were asserted in the negative statements made by the teacher in class. In School 1, the teacher 'put-down' male pupils for inappropriate behaviour, and at the same time disparaged their academic efforts:

> T
> All right, settle down.... Dale (male, low attainer), you know your mouth 'ent' shut up yet!
>
> T
> Dale, I can imagine what you wrote in your book. You're not even looking over. If you are finished take out your reading books. Sholan (male, low attainer), shut up 'nah' boy! You finish? Of course not, you talk too much.

The teacher in School 3 allowed the researcher to interview some of the children during class time, but only sent girls. He stated: "She doesn't want any bad boys with her, she wants girls"! (The boys referred to came from all attainment levels in the class.) In another instance, the teacher pointed out to the whole class that a high attaining boy did poorly on a mathematics quiz! Only boys were sent to the Principal's office for punishment.

This summary point shows consistent preference for high attaining pupils, especially girls. No reference has been made to the teacher in School 5 thusfar; she took a very different approach to her class. If a preference existed for this teacher, it was for the

support of the lower attaining pupils. To answer questions she called upon an equal number of boys and girls, high and low attainers. She gave all pupils the opportunity to answer fully. When the child answered correctly, the teacher gave a compliment:

> The teacher asks the class what are the prime factors of 9 and 15.
>
> T
> Let me hear Jevon.
>
> Jevon answers correctly.
>
> T
> Beautiful, Jevon.
>
> The teacher explains higher common factor concept to class and repeats what Jevon told her. The teacher puts another h.c.f. sum on the board.
>
> T
> Cleon, come.
>
> Cleon does the sum correctly and the class claps for him.
>
> T
> Beautiful. (Cleon looks pleased.)

Even when a pupil had some difficulty:

> The teacher puts another sum on board. Hands go up.
>
> T
> Christian (female, mid attainer).
>
> The girl starts correctly then stalls. Hands go up around the class.
>
> T
> Give her a chance to think. The girl has to use long division in order to find the prime factors of 12.
>
> Pupils start laughing and the teacher begins to smile. Eventually Christian works the sum out.

T
Thanks, Christian.

When the pupil can't finish, the teacher gives the child a chance to work the sums out at their own pace. The teacher is very encouraging.

T
Everybody gets the chance to do one.

Pupils enthusiastically take out their maths books.

Particularly with low attaining pupils:

Faith (female, low attainer) got the entire question wrong. The teacher explains the answer for her in a nice way.

When the pupils answered questions in their notebooks and corrected the answers in class:

After the first correction, the teacher asks if anyone had the answer wrong in their book. She checks the books without reprimanding the pupils... The teacher often deals with the low attaining pupils (answers) first.

4. Teachers, generally, did not take responsibility for improving pupil performance except through the immediacy of question and answer sessions. Teachers' explanation for persistent low attainment often involved low parental interest or capability. A preference for supporting the low attaining pupils meant that class progress would take place at a different (possibly slower) pace from parallel classes; this difference in pace may be perceived as a 'threat' by other teachers.

Question and answer sessions (described above) affirmed that low attainment pupils were not able to participate effectively, especially boys. The disparagement received by these children, especially in School 1, sometimes focused on (and named) a child, but often just referred to the child as *'boy'* ("Shut up, boy!"). Disparagement of pupils was not limited to low attaining boys. The teacher also 'put down' low attaining girls, but not as frequently as the boys. Incidents causing this control and telling off appeared equally in response to the pupils' lack of academic learning and misbehaviour.

Teachers' perceptions of parents tended to be negative and expressed in association with the under-performance of the child. At the start of the Standard 4 year, a number of parents could not accept that their child had not been placed in the 'A' stream (the top

stream in the final primary school year). The researcher said:

> Earlier the teacher told me that one of the hardest things she had to face is parents who can't accept the fact that their child may not be able to do the work in a particular class. This is one of the reasons that pupils left her class and went to Mr A's class. They believe if he teaches them they will pass for (prestige secondary) schools.

If the parent becomes upset when they realise that their child may not be 'bright' enough for the 'A' stream, confrontations were likely to occur:

> The teacher raised a point of parents being a problem if they cannot accept the ability of their child. She says this comes up if a child is placed in a 'B' or 'C class as they may not be able to keep up in an 'A' class. It is also a problem when teachers have meetings and want to discuss problems a child may have with the parent, hi such cases the teacher may get no co-operation from parents and the 'best' thing cannot be done for the child.

One father was so upset by the low stream of his child that he came and 'cursed' the teacher. The teacher said:

> ...teachers really can't help children who have parents like that because even if the children needed assistance the parents will resist and then the pupil's attitude changes. Pupils even start to resent the class they go to and they may resent the teacher.

Parents appear to be seen as the silent supports of pupil attainment. If they do not support the teacher (or teacher's approach) then a child's lack of attainment would not be considered in terms of what the teacher could have done for the child but where the parents failed.

In contrast to the previous teachers' approach (or lack of approach) to their low attaining pupils, the teacher in School 5 made it her responsibility to encourage her low attaining pupils. Often, the teacher would slow the pace of the lesson if one or more of the low attaining pupils did not understand. The teacher would work with both boys and girls who were not attaining well. The effect of her approach, even during a question and answer session, was an eagerness to participate - even if pupils did not get the answer correct. The researcher commented:

> During the session the atmosphere is one of anticipation, excitement and participation. The pupils seem to enjoy working out the sums even when

they may have got it wrong.

If a pupil was persistently wrong, even with coaching in the class, the teacher might ask if another pupil would help the low attaining child during lunch or recess. The teacher told the researcher that she often came into conflict with the other (now standard 5) teachers. She felt that her class could not keep up with the syllabus. Her children needed more 'basic' work. The other teachers thought that they were being criticised for not teaching properly.

5. *As discussed in the summary of secondary schools, 'teacher-less time' occurred frequently in a number of classes. If the teacher did not leave the pupils with definite work to be undertaken during teacher-less time, misbehaviour occurred.* When teachers were present and concerned with the class, or if teacher-less time was planned, children remained well behaved in the classroom. Also, a rigid and authoritarian teacher presence was likely to inhibit pupil participation in class.

Pupil Behaviour:

6. Boys and girls had little to do with one another in the classroom or the playground. Boys and girls presented different classroom strategies. Girls (of all attainment levels) spent more time on-task, were less likely to trouble the teacher and showed solidarity among themselves. Boys rarely worked with one another, did not complete homework as often as girls, were usually those told-off for lack of concentration or misbehaviour and received all of the corporal punishment. Classmates would not help boys if they were not able to answer a question, but girls attempted to help other girls.

The predominant teaching style of question and answer engaged the child as an individual. Boys and girls worked separately in the classroom. There were few opportunities in which they were asked to work together. Working as an individual left the child 'alone' when he or she could not answer a question for the teacher. Boys rarely attempted to help each other when they could not answer a question. The researcher described boys standing at their desks and looking down rather than at the teacher. When girls were unable to answer a question, they often looked around the classroom and received a non-verbal (eye-to-eye) contact that may have supported an attempt to answer.

The example of girls helping each other was found in all classes, during class time and during teacher-less time. In School 1, girls spoke to the researcher about their learning activities and the researcher reported that girls showed more interest (than boys) in the class. They were concerned about other girls in the class. During teacher-less time, they shared answers with one another and read together. Some of the girls would telephone others to discuss homework. Girls rarely teased one another. During recess and play

time, girls were often found walking around the periphery of the playground and talking among themselves. In the question and answer sessions, when girls gave a correct answer they often smiled at friends. If a girl was unable or unsure of providing an answer, she tended to look around and often received supportive contact which encouraged the attempt to answer. Similarly, in School 2 during recess or lunch the girls were likely to stay in the classroom. During this time girls across the attainment range would talk to each other or read. Girls could talk to the teacher if she was not too busy. Girls' solidarity was shown in sharing food and drink and offering sympathy and support for one another. The sharing of experience and information was especially evident among top attaining girls (School 3 and School 4).

Boys did not show solidarity. Their non-classroom activities were dominated by playing with toys or in organised games (like cricket). Boys were not observed helping each other. Boys were most likely to be criticised for being 'off-task' during class time, as shown in the following table from School 1:

Table 3.1: Observed incidents of off-task behaviour by pupils during summer term in School 1 (in class there were 17 boys and 12 eirls)

ATTAINMENT/ Sex of pupil	**HIGH**	**MEDIUM**	**LOW**
Male	8	15	23
Female	3	5	5

In the few incidents of classroom teasing, boys teased girls. At times, there was some aggression between boys and girls; one example was fighting over a particular book. Girls never retaliated against the boys.

At best, the observations showed that boys and girls tolerated the presence of each other and teachers did not attempt to have them work together collaboratively. Even their approach to school work was distinct for boys and girls. Misbehaviour was mainly displayed or attributed to boys. Girls spent more time on task in class and outside of class. The children also realised that they approached school work differently. In one example from School 3, the researcher noted:

> Yesterday, as I spoke to Natalia (female, high attainer) and Salma (female, high attainer). They told me that they don't wait until it is test time to learn their work. Kahlil (male, high attainment) still waits until it is test time.

As a result of these observations the researcher wondered:

> If there are boys and girls having problems with the work, who is more likely to make the effort to understand the work? Kahlil (male) is considered bright, but Salma and Natalia are willing to make the extra effort. Carlos is also intelligent, but is not willing to make the effort.

Children in some of the classes were asked to note classmates that they would like to work with (a sociometric measure). Analyses clearly showed that boys and girls chose not to work with the opposite sex. Girls tended to chose other girls in a similar attainment level as themselves. Boys chose other boys, but from a range of attainment levels.

7. *Reading habits were strongly differentiated by sex and attainment of the pupils. Girls, especially mid and high attaining girls, read fiction and fantasy stories. Boys of all attainment levels were found reading informational books, often with large pictures and little to read.*

From the beginning of the observations, the researcher found that boys and girls chose different books to read in class and spare time. In School 1 (also characteristic of the other schools), the difference in book choice was shown in their strategy for book selection in the library; the boys were mainly found in the reference section:

> The teacher tells the class to go to the library to change their library books. The boys instinctively go for the reference section. Renaldo, Zaheer, David are looking at pictures from a 'Lets Discover' (1/ The Sea 2/ The Earth 3/ People from Long Ago) series. They are attracted to the pictures. Girls are in the classics and fairy tales section and are reading. Navendra, Adam, Lorie and Sean (all males) are looking at a book on aircraft. The book has a lot of colourful pictures. There are short paragraphs to read which accompany the pictures. They are not reading the paragraphs - only discussing the pictures. The girls are looking at Enid Biyton books. Zaheer (male, high attainer) tells me he likes some Enid Biyton books. 1.12: Library session over.

The differences in reading choice (above) focus on male and female pupils. There was also evidence that the higher attaining pupils read a greater number of books. They would also read books which were more difficult. The researcher noted:

> Spent the morning checking library rosters.
>
> Weak girl: Savita: only 5 books borrowed for the term.
>
> I asked the librarian why she thinks one child only has 5 books and she

> says Savita waits until the class comes to the library to change books. More avid readers will come to the library during their free time and will have more books on their roster.
>
> I use this exercise to test a theory to see if girls who don't do well in class are unenthusiastic about reading.... It appears that whether or not a child likes to read is a less important factor than the quality of the books read. The books the weak pupils borrowed, though large in number, were really simple books full of pictures and not suited to their age group. The stronger children borrowed more difficult books.

8. *Children found themselves in competition in most of their classes.* Teachers thought this competition was productive for learning. Children showed: a resignation that only certain pupils would achieve the top grades, embarrassment (and crying) for low grades, an unwillingness to enter the competition if she/he was not sure of the answer and suspicion among competitors. Children had a clear knowledge of their attainment levels.

In the most extreme example of competition in class, the teacher in School 4 divided her class into three groups. During question and answer sessions children could obtain points for their group by answering correctly. If they misbehaved, though, a point might be deducted from their group. While the teacher told the researcher that she expected 'fair' competition between the groups, observations showed that not all children participated and some children felt the grouping was unfair. In the class, the teacher placed all of the high attaining children in group 'a', and group 'a' was most likely to provide the correct answers in class. In groups 'b' and 'c' children's involvement was less than could be expected. Overall, the children competed to provide answers. At the same time, the class knew that the 'a' team would receive the most points. Teams would cheer if they received a mark, but were anxious if the team failed to receive a mark:

> ...if any one pupil misses a question, benchmates would chastise the child. All pupils who were asked a question appeared more concerned with not giving the wrong answer than giving the right answer. Some don't answer if they are unsure. This is very difficult for them, especially since their team-mates are looking at them expectantly. If they answer incorrectly and other members of their team had the answer, the child will be chastised.... Problem: Kimberlee and Marie have given wrong answers but have pointed fingers at Tammy and Kieron (on another team) for talking and these pupils lose points for their team!

Team competition replaced interpersonal competition that characterised other observed classrooms. Individual personalities did not appear in this class. Children knew who

were the high attainers: Avion (the daughter of the teacher) and Leon (the class prefect). The class also knew who were low attainers: Lulumba often had no book, no homework and was afraid to answer questions. Classmates did not want to share their texts with Lulumba.

Competition in the other classes was found in the constant question and answer sessions and quizzes that the children undertook. Especially when quizzes were completed and graded, children quickly became aware of how their performance measured against their classmates. They were asked to read out their scores to the whole class and the teacher (or a classmate) was likely to comment on these outcomes.

Classroom Management:

9. By the time that observations began in May of the Standard 4 year, the children had a good grasp of school rules and generally conformed to them. Rules required pupils to enter class in an orderly fashion, wait to be recognised before making a contribution to class and to respect the teacher and classmates. The assertion and acceptance of rules was not discussed or debated among the classes. Only one class undertook a 'democratic' discussion and generation of rules. When rules were breached in class, punishments were made differentially (against boys, in the main) and sometimes singling a pupil out (for particular criticism in front of the class). Punishments were used for academic (inability to provide a correct answer) and behavioural control.

In most of the classrooms the teacher was seen as the rule-maker and rule-enforcer. The didactic nature of the classroom, with only one teacher responsible meant that there was a consistency in organisation for the children (as opposed to observations made in the secondary schools). Rules were rarely stated in class except when they were transgressed; these incidents were most likely to be observed at the end of a period of teacher-less time. In all classrooms the children entered and left in an orderly fashion - when told to do so by the teacher. Children were asked to participate when (or if) they raised their hands; examples where this rule was broken were mainly when a child was very enthusiastic about providing an answer. When a child was called upon to answer, she or he had to stand-up in front of classmates.

Correct or incorrect answers were made very explicit to the rest of the class. Cases of over-enthusiasm were usually met with a subtle reminder from the teacher.

The researcher found only one class where rules were being generated in a 'democratic', participative manner. The teacher in School 5 has already been noted for her unusual approach that supported low attaining pupils. Here she actually discussed and agreed rules with the class rather than asserting them unilaterally. Once children agreed rules, the rules were written in their class books and the children were expected to conform to

them. Participation of children in resolving classroom problems was also exhibited in another incident:

> 10.50: The teacher is called to a meeting. When she comes back she is told that Stacy and Nicola were fighting.
>
> T
> Stacy tell me what happened. (Stacy tells her story)
>
> T
> Nicola what happened? (Nicola tells her story)
>
> Stacy had refused to let Nicola pass to get into her seat. Nicola fought her when she could not pass. Stacy told the teacher that Nicola passes too often. The teacher encourages Nicola to apologise for losing her temper. The class was asked to suggest what else Nicola could have done to prevent the fight. Stacy comes off as wrong as she spoke to the teacher.

10. Teachers used two methods to seat their pupils in the Standard 4 year. In most of the classes observed seating was segregated by sex and ability and few teachers actively sat boys and girls next to each other. When teachers used planned and integrated seating arrangements, it was to control particular members of the class.

The need to consider assigned seating and classroom control was made evident in the secondary school case studies, especially when large amounts of teacher-less time contributed to classroom confusion. In the primary schools, there was less teacher-less time (also lasting shorter lengths of time) in the classrooms. With the teacher's greater presence in and around the classroom, potential misbehaviour was less likely to take place and we cannot comment on whether segregated seating exasperated misbehaviour or not. When seating was segregated, though, girls tended to sit next to each other and towards the front of the room (nearer to the teacher). Boys and lower attaining pupils sat towards the sides and back of the room. Teachers were aware that segregation could lead to misbehaviour, such that (in School 2) the teacher told the researcher that she moved boys in the classroom to control their possible misbehaviour. This behavioural control usually meant that the offending boy was made to sit next to a girl. Three of the five teachers were observed to assign seating for pupils. The teacher in School 5 mixed boys and girls and different attainment levels throughout the year. The teacher in School 2 assigned low attaining children to sit near her desk. In School 4, the teacher used seating for control:

> The teacher rearranges pupils in an attempt to place talkative pupils by serious pupils.

and for improvement in learning:

> I have spoken to the teacher and she tells me that she has placed the weak pupils in front of her. They are the ones she believes need help.

Children, usually boys, who the teacher caught talking or not paying attention were moved next to girls. Not all of the girls liked having boys moved next to them - they accepted the teacher's direction but complained to the researcher when the teacher was out of the classroom.

11. Pupils had to share limited numbers of books and other resources. These occasions were not used to introduce collaborative or co-operative working among pupils. In the more competitive classroom atmospheres of Schools 1 through 4, some antagonism was expressed by pupils when they had to share with a child that was not a friend. In School 5, where the teacher adopted a supportive approach, the children accepted the need to share without complaint.

Teaching and Learning:

12. *The predominant teaching style was didactic: through the use of question and answer sessions and information presented from the teacher (on the blackboard or dictated).* There was little or no evidence of alternate techniques that arose from (child centred) pupil interests/ideas. Pupils were placed in a passive as opposed to active learning role.

One of the initial observations undertaken in School 2 gives a flavour of the flow of information and control of knowledge by the teacher:

> The teacher puts the date and a diagram on the board.
>
> T
> Can anyone tell me what is on the board?
>
> Class
> Yes.
>
> T
> What oil refineries are there in Trinidad and Tobago?
>
> Hands go up.

T
Seon?

Seon gives the wrong answer.

T
How many are there?

Teacher chooses Pria.

Pria
At Point-a-Pierre.

Teacher then discusses the process of oil refinery. She refers to the diagram which shows all the stages in the process of refining oil. She tells the class what can be made with the product from each stage...

T
The final part is called asphalt and this is the part we will deal with today. Do you know where the asphalt lake is?

Rochelle answers.

Garvin says asphalt comes from oil.

T
Not from oil alone. Where can it come from?

Hands go up.

T
No, not the sea...Avemesh?

He gives the right answer.

T
The main use of asphalt is to surface roads and patch roads. Asphalt is also used in paints.

Maya
Miss, exterior emulsion.

T
Yes.

Dominic
Miss?

T
Yes.

Dominic
Under the ground.

T
When it gets hard what is it called?

Class
Pitch.

Teacher writes on board how asphalt is formed.

T
What are the uses of asphalt? Cindy?

Cindy gives no answer.

T
Heidi.

Heidi
Miss, paints.

T
Where are your glasses Dominic?

Teacher tells class to copy what they see written on the board.

9.33: T
Don't take all day.

Pupils then go to get their books checked.

This quote shows an intensity of (question and answer) interaction while information and presentation is under the control of the teacher. There are many other examples of even more rapid firing of questions with the expectation of quick answers from the pupils.

Quizzes were also used throughout the observations to 'test' pupil learning. Pupils also had to maintain their classwork in notebooks that were collected and corrected by the teachers in all of the classes.

The pupils who achieved well in these classes were those who had prepared their work at home or those who were 'quick' to catch on to the flow of question and answers. The teacher provided little praise or encouragement for successful answers, especially the teacher in School 3. When pupils were unable to answer, he used a mixture of sarcasm or told other pupils to provide the answer. Efforts were not made to encourage understanding, especially for those pupils unable to provide the correct answer. Some pupils did not participate in the class, the researcher commented that it may be the competitive nature of the teaching and learning situation that made them too nervous to contribute.

The one alternate example of a teacher who tried to move from the didactic approach was found in School 5. She made a number of comments about her own teaching style to the researcher. She called her style 'experimental and creative', although it was predominantly question and answer. She used this style:

> ...because her class are too mechanical. For example, she says she believes they have notes (on a subject) but can't tell her in their own words. She says teaching with notes makes her angry as it takes less of a teacher and places too much emphasis in the pupils' initiative to pick up... The experimental and creative style helps to motivate this mid stream class.

Within the style, she interacted with the pupils. The lessons were structured, but the teacher accepted pupil ideas and contributions. A number of her questions were open ended, and pupil contributions were integrated into the lessons. Additionally, all children maintained a diary in which the teacher encouraged a daily entry. She stated that the diaries were used 'to help them express themselves and let the ideas flow'.

13. Learning throughout the observations was focused on the individual. There were no examples of co-operative or collaborative techniques in use. The teacher in School 4's use of competition between groups supported more suspicion than collaboration among group members. Even when children tried to work together, pupils were told that they must work as individuals. In one example of two boys trying to work together, the

teacher in School 1 said:

> Now I want you all to try to do your own work. It is the only way I can see where you need your help.

and another time (to the same boys):

> You have your own work to do, I never asked you to work together.

14. In most of the classrooms, the learning pace was dictated by the high attainers. This focus left low attainers with little opportunity to achieve understanding or receive feedback from the teacher. Differences between the attainment levels was accentuated through constant quizzes and the question and answer sessions. Pupil involvement, for the most part, was dictated by the attainment level of the child. Teachers could increase involvement by changing the syllabus pace and focusing on understanding of low attainers. These changes ensured that low attainers were given the opportunity of inclusion.

Pupils did not demonstrate active involvement in the learning process throughout most of the observations. Those who answered correctly during the question and answer sessions were, at times, given positive reinforcement in the form of praise. More often, their answers were simply acknowledged and the teacher moved on to the next question. When pupils could not answer the question (especially low attaining pupils), the teacher rarely took the opportunity to explain how the correct answer was attained. Pupils were told what they had not learned (eg. mathematics tables) - not how to improve. Occasionally, low attainers were told that their parents would be called in to be informed of the pupil's lack of effort.

Teaching and learning in most classes was firmly based on what the pupils had learned in the past or had undertaken as homework. The question and answer sessions brought about a constant revision of previous material. If the pupil had not effectively learned this material, little opportunity was offered to help bring the child's knowledge up to a functional classroom level. The teacher (in School 3) went so far as to say that the pupil who could not answer his questions belonged in a younger year group.

Characteristic of the didactic teaching style, the higher attaining pupils dictated the pace of the class. Non-understanding was a problem infrequently identified by the teacher as some pupils concealed themselves from being called upon - fearing the losing team points (in School 4) or sarcasm (School 3). There were few occasions in which teachers slowed the pace of the class to ensure that all of the pupils understood the topic. Only in School 5 did the teacher slow the pace to ensure that the whole class was able to answer correctly.

The didactic teaching style was likely to inhibit the participation of some children, especially the low attainers. Teachers did show that this passivity could be overcome in their pupils in a few instances. First, even with a didactic approach, the teacher in School 5 ensured that all pupils participated. Correct answers were positively reinforced through praise. Incorrect answers were worked through with the pupil, either with the teacher or another pupil who explained how the answer was determined:

> The teacher begins correcting the language exercise. She asks pupils questions. Nmandi (female, low attainer) tries to answer but gives the wrong answer and pupils giggle. The teacher asks pupils why certain answers were chosen.
>
> T
> Kieron. (He stands, no answer.)
>
> Jonelle explains why the past tense is chosen and not the past participle. Tenille and Meighn are asked to do the next question. Meighn answers and the teacher asks the class if the answer is right. If pupils disagree, they must say why.

The teacher kept a constant account of the work of the lower attaining pupils through the question and answer sessions and checking their work books. When children made mistakes in their class books, the teacher discussed corrections with each child individually. The child was asked to make further corrections where necessary.

The teacher in School 2 increased pupil involvement, especially among the low attaining pupils, in one instance when the class was asked to role play a television reporter:

> T
> What are we reporting on?
>
> Class
> Ma sara.
>
> T (to Heidi, high attainer):
> What was our purpose?
>
> Heidi
> We are looking at different people in the market.

T
What else, Christina?

Christina (mid attainer)
We are watching what people do.

Dominic (low attainer)
They trying to find fat, good business women.

The class giggles.

T
Alright!

Errol (low attainer)
The person who has the best sweets.

Seon (mid attainer)
The children's favourite vendor.

T
Yes, that's it. So we have established our purpose. We are in the Tunapuna market. We want to know what causes children to go to her..... Dominic come, are you all ready to listen to him?

T(to Dominic)
Remember you are reporting. Anyone who wants to be Ma sara?

The boys shout Kerry. Kerry does not want to do it.

T
Who else wants to come? Genevieve (high attainer) come... You must have a introduction, Dominic, what do you have?

Dominic
We are coming to you from the stall of Ma sara.

T
Good, then you must have...

Dominic continues with his introduction, which is good and the teacher

tells him so. He finishes asking Genevieve questions. Then the teacher asks Kerry (low attainer) to come with Dexter (mid attainer) to do the skit. Dexter is to be Ma sara. There is much laughter during and after the skit when Kerry and Dexter do it.

T
Who else wants to go?

Hands go up.

T
Before we go inside, what have you leamt about reporting?

Rainier (low attainer)
It's fun.

Dexter
It's education.

Rochelle
You have to use your head.

Myles (low attainer)
It is similar to composition.

T
Why, Myles? (Myles takes long to answer.)

T
We will come back to you.

Rochelle
It has an introduction, a body and conclusion.

Kerry
Is a form of advertising for people.

The teacher asks class to go inside, session over.

There was only one other observed incident that brought about such an involvement, especially by low attaining pupils. In this instance the teacher was working on the

concept of meridians. She asked various children to come to the front of the room and painted various planets on them. She had the children move around each other and she was able to draw the pupils into an understanding of time and planet rotation.

Homework was assigned by all teachers every day. Most pupils undertook and completed their homework, but outcome and understanding was inconsistent with simply having completed the assigned work. Those who did not complete the homework correctly or did not complete it at all were unable to receive positive feedback from their teachers. Boys, especially, were those most likely to be identified as not completing homework. Boys did not receive help from other boys - and only rarely would they receive help from girls.

15. Homework was an important, but underused resource for learning. Teachers gave the appearance that homework was the source of learning and that classwork was for the review of home learning. If homework was not completed or completed incorrectly the pupil could not be expected to learn in the class. The teacher did not tell the pupils how to do homework or develop their understanding. Girls showed a strategy to share their homework (and problems). Some parents checked their children's homework, but parents of low attaining children did/could not provide much help.

The help or lack of help that parents could provide was described by the teacher in School 5 - when she provided reasons for poor performance in class to the researcher. Her descriptions began with Keston, a low attaining male who missed school often and moved to Faith, a low attaining female:

> Keston is a child that barely comes to school. The teacher called in his father and the father never came. She has several students whose parents don't seem interested. She has a rule that parents should sign homework books. Several parents don't sign. Then, if they are called to see her, they don't show up. Faith's father never signs her book. The teacher had to quarrel with him over it as the child is behind in her work.

In contrast, a report of a discussion with Gary (high attainer):

> Gary says his mother always checks his work and signs his books.

On reflection, the researcher made the following statement with regard to the poor performance of some children in class:

> It also appears that if a child is in a situation where the mother is absent or uninterested and there is no other female to show interest in the child's work, the onus falls on fathers. In most cases the child suffers. Male

parents don't seem to show the same level of interest; this is, perhaps, what happened to Faith and Keston.

Thus, for low attaining pupils the mother may be central to the promotion of the child's education. Even when one child came from an educated background, the child's poor study learning skills were attributed to the parents and the mother in particular:

The teacher told me that she had called Kieron's mother to ask about his mathematics. (Kieron's father teaches economics and his mother is a guidance counsellor.) Kieron's mother told the teacher that she couldn't do mathematics, thus the teacher believes that the parent's mental block is reinforcing the child's.

SOME IMPLICATIONS FROM THE PRIMARY SCHOOL DATA:

Implications are derived from the above summary points. The order of presentation does not relate to order of priority or importance.

a. Teacher control and teacher preference are strongly associated with the higher attainers in class. Such a strategy excludes the full attainment range and ensures that the pace of the classroom leaves some children behind.

b. Competition generated within question and answer sessions and frequent quizzes (even if used to prepare for the CEE) encourages the high attainers and discourages the low attainers.

c. Homework is an important aspect of pupil learning and preparation for classwork. Some pupils, though, do not have people who can understand and help at home.

d. Reading interests and habits show a fundamental difference between attainment levels and boys and girls.

e. Reliance on the individual child as the source of participation in the classroom has not been augmented by paired work, peer tutoring or cooperative learning.

f. Children can and will participate in learning and generation of classroom rules if they are given the opportunity to participate.

4. Barbados study: Quantitative survey and case studies

4.1 The quantitative survey background:
4.2 Barbados case study: Harbour, 6th form co-educational secondary school
4.3 Barbados case study: South, single sex, female-only (newer, non-sixth form) secondary school

4.1 The quantitative survey background:

This report began with the quantitative assertion that females were performing better in schools than boys in Trinidad and questioned whether this finding generalised to other Caribbean countries. Further, we were concerned to ascertain whether there was a 'drop-out' among boys as they progressed through the school years.

The generalisation of gender differentiated achievement and staying-on in the Caribbean required that both quantitative and qualitative studies be undertaken in another country and Barbados was chosen to provide this comparative perspective. A similar argument will be presented in the next chapter for the inclusion of St Vincent. These two additional islands present structurally similar studies, but are reported separately because they represent dissimilar populations. The school system in Barbados allows for universal primary and secondary education, similar to the system in Trinidad. The school system in St Vincent offers universal primary education. Secondary education is only available for 60% of the primary school leavers.

The Barbados section of this report establishes quantitative rates and background factors correlated to academic success and failure as well as using small, focused case studies to obtain qualitative insights into female and male learning strategies. The Barbados study substantiates speculative information concerning girls' successful educational performance at both primary and secondary school levels. To substantiate the speculative information quantitative information was collected concerning primary and secondary pupil performance throughout the country, using a representative sample similar to the sample used by Jules & Kutnick (1990). Information collected included: paternal and maternal occupation, sex of pupil, age of pupil, birth placement in family, end-of-term test scores and Common Entrance Examination scores (where appropriate). Additionally, children were asked to provide further information about their lives at home and this included: whether they undertook jobs (chores) in and around the home, who the child lived with, who helped the child with homework and whether the child attended a pre-school. Upon completion of quantitative data collection and preliminary analysis, secondary schools were selected for case study (using ethnographic techniques).

THE SAMPLE:

To report on within-class and national achievement scores for children attending the state funded schools of Barbados a sample representative of the school population as a whole was required. The sample included a proportional and focused selection of all types of the stratified primary and secondary schools within the island. Stratification within primary school types are found in:

a) all-through co-educational primary schools,

b) male-only and female-only primary schools,

c) composite schools (primary schools with additional year groups for those children who did not pass the CEE but had not reached the age at which they could leave compulsory schooling), and

d) senior schools (similar to composite schools, but without the lower years of the primary school).

There are very few private primary schools in Barbados, and they were not included in the sample. Also, there are no state-funded, religious maintained primary schools in Barbados. Of the eighty-four primary schools on the island, twenty-one schools were identified for inclusion in the study. Selection of actual schools was proportional to type of primary school within the whole population of primary schools. Actual number and types of primary schools selected included: 13 co-educational primary schools, 2 male-only primary schools, 2 female only primary schools, 3 composite schools, and 1 senior school.

All secondary schools in Barbados are comprehensive, as they provide a full range of curriculum subjects for study. All but four of the secondary schools are co-educational. Secondary schools are differentiated or stratified on two criteria: whether the schools have a sixth form, and criteria based on CEE results. Stratified types of secondary schools within Barbados include:

a) long established, co-educational schools that include a sixth form,
b) established, co-educational schools without a sixth form,
c) newer co-educational schools without a sixth form, and
d) single-sex schools without a sixth form.

There are twenty-two secondary schools in Barbados. The sample selected twelve schools for inclusion in this study. The twelve schools included: 4 sixth form, co-educational schools; 3 established co-educational schools without sixth forms; 3 newer co-educational schools without sixth forms; 1 boys-only school without a sixth form; and 1 girls-only school without a sixth form.

Within the sample, information was not collected from all children in each of the schools. In parallel with the strategy used in Trinidad, five year levels were identified for study. In each primary school one class of

the Standard 1 level (children aged approximately 7 to 8 years) was randomly selected and all classes at the Standard 4 level (children aged 10 to 11 years, the top year level for primary schools) were selected. Random selection of Standard 1 classes was made because these were mixed ability classes. All Standard 4 classes were selected to include any streaming (tracking) strategy used in the school. In each secondary school a Form 2 and a Form 4 class were randomly selected for inclusion. In the sixth form schools, random selection also included a Form 6 class. Overall, data was recorded for 2255 children. There were 1551 primary school children and 704 secondary school children surveyed. The sampling strategy drawn upon was proportional (in relation to the number and types of schools in Barbados), focused (in the choice of survey school within the appropriate proportions), stratified (by type of primary and secondary school, and by year level in school), random (by choice of class per year level except for Standard 4), and clustered (in that information was obtained for all of the children in each of the classes chosen for inclusion).

INFORMATION PROVIDED BY THE SURVEY:

1. Who is succeeding in school? This first, and main, question was not simple to answer even if we focused on differences between males and females solely. Initially, consideration must be given to success within-class and by curriculum subject. These questions were asked to confirm the generalisability of female success found in the Trinidad results and to ascertain whether stereotypical course preference (male preference for mathematics and sciences and female preferences for humanities and social sciences) was shown in class attainment. Within-class scores are the essential starting point for understanding academic success; for it is within the intensity of classroom interaction that children are provided the encouragement and motivation to succeed through the feedback and responses given to their work. Further, the question of success should move beyond the within-class level to the national level to ascertain whether the attainments of males and females within-class can be generalised to a different assessment situation.

Within-class attainment: Drawing upon the 'raw' scores (actually assigned by teachers on the end-of-term examinations), girls were found to perform at significantly higher levels than boys in the core subjects (of English, mathematics and social studies) and integrated sciences (see Table 4.1.1). The scores show a superior performance of girls at a general level, but do not account for variations between teachers (in their ability to write 'fair' tests and the difference in subject matter that may be covered in each individual class). Standard deviated scores for each subject by class within each school were calculated so that valid comparisons could be made between schools. (Standard deviated scores assume that the scores from each class form a normal distribution for that class and a standard deviation for the class mean can be calculated for each child. Thus, while class scores may vary, deviations from the mean remain a consistent and comparable feature between classes. This calculation is useful for comparisons with regard to the interpersonal variables such as sex, parental occupation, etc., but cannot be used to compare between whole classes (and schools) - as these variables will contain the same range of standard deviated scores.)

Table 4.1.1: Raw and standard deviated scores for core subjects and significance of differences between boys and girls.

Core Course	Average Male Score	Average Female Score	Difference based on Raw Score	Difference based on S.D. Score

English	58.23	64.33	F1,2129= 52.186, p<0.0001	F1,2128= 64.292, p<0.0001
Maths	57.36	63.02	F1,2147= 37.679, p<0.0001	F1,2146= 23.530. p<0.0001
Integrated Science	59.79	63.19	F1,1508= 9.578, p<0.002	PI,1502= 8.896, p<0.003
Social Studies	57.84	64.25	F1,1790= 46.786, p<0.0001	F1,1787= 22.555, p<0.0001

Table 4.1.1 shows that girls scored significantly higher than boys when drawing upon the raw or standard deviated scores. On average the girls scored six percentage points higher than boys. These scores (as shown in the Trinidadian case studies) allow a higher placement in classroom ranking and the possibility of more (and more positive) feedback from their teachers.

Within the secondary schools, where differentiated and more extensive courses were run, the differences between males and females were not so clear cut (see Table 4.1.2).

Table 4.1.2: Sex differences among secondary school students by subject and reporting raw and standard deviated scores (number of students taking these courses in brackets).

Courses	**Average Male Score**	**Average Female Score**	**Difference based on Raw Score**	**Difference based on S.D. Score (comparisons for coed. schools only)**
English	56.97 (303)	58.77 (337)	N.S.	F1,521-22.548 p<0.0001
Maths	52.80 (311)	56.13 (343)	F1,652= 5.165, p<0.023	N.S.
Social Studies	58.04 (276)	61.53 (305)	F1,578= 5.905, p<0.015	F1,482= 9.440, p<0.002
Biology	48.29 (38)	55.10 (82)	N.S.	F1,109= 10.38, p<0.002
Chemistry	48.30 (43)	52.75 (77)	N.S.	N.S.
Physics	52.56 (36)	54.02 (50)	N.S.	N.S.
Foreign Language	57.27 (220)	65.53 (258)	F1,476= 27.654, p<0.0001	PI,407= 37.436, p<0.0001
Business Studies	55.84 (88)	59.04 (99)	N.S.	F1,136= 3.863, p<0.051

Industrial Arts	49.89 (91)	51.26 (38)	N.S.	F1,110= 11.292, p<0.001
Fine Arts	51.46 (54)	51.10 (87)	N.S.	N.S.

Within secondary schools, girls were found to perform consistently better than boys although then-performance (based on raw scores) may not have achieved significance in all subjects. Use of the standard deviated scores provides a clearer analysis, but comparative results can only be reported for students in co-educational schools. In no subject did boys perform better than girls. Girls maintained

their comparative and significant superiority in English, social studies, biology (but not the other differentiated sciences), foreign languages, business studies and industrial arts. Table 4.1.2 also shows that a greater number of girls than boys were found taking courses in each subject except Industrial Arts. The superior number of girls was found (especially) in 'traditional' male subjects of mathematics, chemistry and physics.

When raw score performance was compared by sex in relation to type of school attended the consistent female dominance was not maintained (Table 4.1.3). This table used an average of the raw scores for the core subjects (including an average score for the individual sciences at the secondary level). As noted, girls scored consistently higher than boys but did not achieve a significant difference in the Senior Primary schools (where very few pupils attended) or in the newer co-educational secondary schools.

Table 4.1.3: Raw score performance of boys and girls by type of school attended (for co-educational schools only)

Type of school	**Average Male Score**	**Average Female Score**	**Difference based on Raw Score**	**Difference based on S.D. Score**
Primary -general	59.42	67.04	F1,1082= 40.668, p<0.0001	F1,1082= 34.633, p<0.0001
Primary -Composite	55.02	65.86	F1,127-8.424, p<0.004	F1,127= 9.481, p<0.003
Primary-Senior	54.22	59.62	N.S.	N.S.
Secondary (older)	54.91	58.82	F1,156= 6.427, p<0.012	F1,156= 8.501, p<0.004
Secondary (newer)	51.34	54.70	F1,144= 3.499, p<0.063	F1,144= 3.563, p<0.061
Sixth Form	58.22	61.82	F1,260= 5.277, p<0.022	F1,259= 11.540, p<0.001

A closer inspection of the results of students in the sixth form schools shows that there were no significant differences between boys and girls in any of the separate core curriculum subjects. Girls' slightly higher

averages in each curriculum subject obviously was the contributing factor to a significantly higher averaged end-of-term raw score. Nonsignificant differences in the separate curriculum subjects was characteristic of each of the three form levels (2nd, 4th, and 6th). A similar pattern was found when the same analysis was undertaken using the standard deviated scores. Nonsignificant differences also characterised the separate core curriculum subjects in the newer secondary schools. Within the older secondary schools, girls maintained their superiority over boys (on both raw score and standardised scores) in English and social studies, although differences became non-significant in mathematics and science. These findings both confirm the expected female superiority in overall classroom performance and indicate that both male and female scores can vary to include high scoring males and low scoring females.

One final way of looking at the raw scores for these children was to compare average raw scores for each year level and in each subject (Table 4.1.4). This comparison showed a gradual improvement of males during the years of secondary schooling although a greater number of females were found to be studying in each of the subjects. The gradual increase in male scores is partially accounted for by the academic selectivity of males who remained in secondary schooling through to sixth form (see further subsection on drop-out).

Table 4.1.4: Comparison of raw scores of males and females by year level and subject (number of students per individual science course in brackets)

LEVEL/ Subject	**STANDARD ONE**	**STANDARD FOUR**	**FORM 2**	**FORM 4**	**FORM 6**
English:					
male	66.39	55.34	59.92	52.18	59.33
female	74.69	63.29	61.59	56.95	52.77
Social Studies:					
male	65.93	54.45	60.90	53.71	54.35
female	76.03	61.35	65.89	58.26	54.08
Maths:					
male	65.85	56.31	55.18	49.74	51.59
female	73.45	62.86	55.13	56.74	57.86
Science:					
male	68.32	57.34	59.32		
female	76.56	61.46	58.91		
Biology:					
male				50.74(34)	55.00(2)
female				58.88(65)	57.58(12)
Chem.:					

male				49.24(34)	50.38(8)
female				56.97(62)	40.77(13)
Physics:					
male				54.36(25)	59.22(9)
female				56.44(36)	51.46(13)

CEE, national comparison: Common Entrance Examination scores are the one example of a national examination, with consistent criteria for scoring across all schools. Girls showed significantly higher scores than boys on the CEE ($F_{1,1730}= 67.139$, $p<0.0001$; boys average = 51.36, girls average = 60.68). Table 4.1.5 displays that girls scored higher than boys in the co-educational school types but the difference was not significant in the schools with Sixth Forms. Scores for single-sex schools are added for information only.

Table 4.1.5: Average CEE scores by sex within types of secondary schools (number of students contributing to each average in brackets)

Type of school	Average Male Score	Average Female Score	Difference
Secondary (older)	71.07 (71)	74.20 (78)	$F_{1,147}= 5.583$, $p<0.019$
Secondary (newer)	40.03 (81)	47.14 (59)	$F_{1,138}= 4.265$, $p<0.041$
Secondary Boys only	42.58		
Secondary Girls only		45.48	
Sixth Form	82.51 (93)	83.16 (156)	N.S

The letter grade assigned to written work on the CEE again confirmed that girls scored higher than boys (see Table 4.1.6). The differences shown in the table are confirmed statistically $(X^2) = 91.862$, $p<0.0001$).

Table 4.1.6: Number of students obtaining each of CEE letter grades by sex (percentage of sex by grade in brackets)

SEX	LETTER GRADE					Row Total
	E	D	C	B	A	
male	85	175	264	180	99	803
	(10.6)	(21.8)	(32.9)	(22.4)	(12.3)	
female	30	116	258	275	202	881
	(3.4)	(13.2)	(29.3)	(31.2)	(22.9)	

Column Total	115	291	522	455	301	1684

Streaming: CEE were not taken until children were ready to leave primary school, thus performance of boys and girls in primary schools could not be compared nationally. Some insight can be gained through the inspection of the placement of males and females into streamed classes; selection into top stream was based on the school's perception of the child's academic ability. If the school was large enough to sustain more than one class per age group, pupils were placed in academic ability streams for the duration of their final year in primary school (Standard 4). Among the streamed classes, girls and boys were found at all levels. Table 4.1.7 shows that a higher proportion of boys were found in the lower streams and more girls were in the top stream in schools; this difference was significant (X^2 (3) = 16.591, $p<0.0009$).

Table 4.1.7: Placement of boys and girls in various stream levels in the top year of their primary school (percentages by sex per stream in brackets)

SEX	**STREAM**				**ROW Total**
	bottom stream	**high bot torn stre**	**next to top stre**	**top stream**	
male	40	97	129	121	387
	(54.1)	(59.5)	(53.1)	(41.2)	(50.0)
female	34	66	114	173	387
	(45.9)	(40.5)	(46.9)	(58.8)	(50.0)
Column	74	163	243	294	774
Total	(9-6)	(21.1)	(31.4)	(38.0)	(100.0)

2. *What was the distribution of male and female pupils in each of the year levels, and was there evidence of a male 'drop-out' rate at the secondary school level?*

Overall, there was a roughly equal distribution of male and female students in the survey; 48.5% of the sample children were male and 51.5% were female. The breakdown of males and females by age group (or year in school) shows an increasing 'drop-off in the number of males attending school as students progressed through the secondary years (see Table 4.1.8); the nearly equal distribution of males and females in the standard one year changed to nearly two-thirds female in the sixth form. Evidence of this drop-off is first shown at the Form 4 level, although this is seen even more dramatically at the sixth form.

Table 4.1.8: Distribution and percentage of participation of males and females by year in school (percentage by year group in brackets)

SEX	**SCHOOL YEAR**					**Row Total**
	standard one	**standard four**	**form 2**	**form 4**	**form 6**	

Male	239	517	169	133	25	1083
	(49.8)	(48.8)	(52.2)	(44.3)	(35.7)	(48.5)
Female	241	542	155	167	45	1150
	(50.2)	(51.2)	(47.8)	(55.7)	(64.3)	(51.5)
Column	480	1059	324	300	70	2233
Total	(21.5)	(47.4)	(14.5)	(13.4)	(3.1)	(100.0)

Explanations for the drop-off in male attendance were explored (post hoc) statistically. Initial speculation questioned whether the boys who dropped out may have come from a particular social class background. Social class of fathers was identified in the categories used in the Barbados census, and the individual categories were placed into three broader groupings (of professional-managerial, sales-skilled, craft-unskilled). Distribution of the surveyed boys into these groupings (Table 4.1.9) shows a predominance of boys coming from a craft-unskilled background, and approximately one-third of the boys did not know the occupation of their fathers (or did not know their fathers at all).

Table 4.1.9: (Grouped) Paternal occupations of boys surveyed

Value Label	Frequency	Percent	Valid Percent	Cum Percent
prof/ man	239	22.0	31.0	31.0
sales/ skilled	146	13.5	18.9	49.9
craft/ unskilled	386	35.6	50.1	100.0
no occupation identified	313	28.9	Missing	
Total	1084	100.0	100.0	

Table 4.1.10 displays the distribution of boys by social class at each year level. The table shows a skew of higher social class in the primary school year level and the opposite at sixth form; the difference in parental occupation by year level was statistically significant (X^2 (8)=51.859, $p<0.001$). Of the twenty-one boys who identified their father's occupation at Form 6, three-quarters were from a craft-unskilled background.

Table 4.1.10: (Grouped) paternal occupation of surveyed boys by year level

YEAR	FATHER'S OCCUPATION			Row Total	No occupation provided
	Manager	Skilled	Unskilled		
standard one	110	31	37	178	61
	(61.8)	(17.4)	(20.8)	(23.1)	
standard four	194	69	97	360	157

	(53.9)	(19.2)	(26.9)	(46.8)	
form 2	41	26	55	122	47
	(33.6)	(21.3)	(45.1)	(15.8)	
form 4	37	18	34	89	44
	(41.6)	(20.2)	(38.2)	(11.6)	
form 6	3	2	16	21	4
	(14.3)	(9.5)	(76.2)	(2.7)	
Column	385	146	239	770	
Total	(50.0)	(19.0)	(31.0)	(100.0)	

As paternal occupation was negatively correlated with staying-on of boys to sixth form, it was worthwhile to explore whether the same relationship was true of maternal occupation and boys who stayed in school. Table 4.1.11 presents a very different picture for the support of the academic staying-on of these boys and maternal occupation. A majority of the boys in sixth form who provided information about maternal occupation showed that their mothers were well educated and held responsible positions.

Table 4.1.11: (Grouped) maternal occupation of surveyed boys by year level

YEAR	**MOTHER'S OCCUPATION**			**Row Total**
	professional /man	**sales/ skilled**	**craft/ unskilled**	
standard one	26	51	62	139
	(18.7)	(36.7)	(44.6)	(20.2)
standard four	68	148	128	344
	(19.8)	(43.0)	(37.2)	(50.0)
form 2	36	51	28	115
	(31.3)	(44.3)	(24.3)	(16.7)
form 4	22	34	19	75
	(29.3)	(45.3)	(25.3)	(10.9)
form 6	8	5	2	15
	(53.3)	(33.3)	(13.3)	(2.2)
Column	160	289	239	688
Total	(23.30	(42.0)	(34.7)	(100.0)

A further post hoc comparison for males, showed that there were few differences in the home backgrounds of those who stayed to sixth form from the younger boys. The comparison included variables with regard

to chores and responsibilities that they undertook at home, whether they had attended pre-school, or with whom they lived. The males who stayed-on to sixth form had a significantly higher CEE score than other boys in secondary schools ($F_{2,299}=13.453$, $p<0.0001$); their average score was 85 while boys in fourth form was 58 and second form was 60. Those in sixth form also had a better attendance record than other boys ($F_{2,201}=4.227$, $p<0.016$); those in sixth form only missed an average of 2.4 days in the current academic year, while those in fourth form missed an average of 6.7 days and second form missed 4.8 days.

3. What explanations can be offered/or school-based success and failure. Within-class and CEE results and parental occupation: As would be expected, there were significant differences in core curriculum scores and CEE scores found between children whose parents worked in different occupations. As an example, Table 4.1.12 displays differences in average end-of-term scores and CEE scores by paternal and maternal occupation. This table shows that children whose fathers and mothers work in higher, more educated occupations scored consistently high on end-of-term tests and on the CEE examination. These results also characterised separate core curriculum end-of-term tests.

Occupation	Average end-of-term score by father occupation	Average end-of-term score by mother occupation	CEE score by father occupation	CEE score by mother occupation
top managers	64.14 (134)	64.81 (62)	70.55	72.85
professional	67.40 (213)	67.33 (264)	74.06	73.56
tech assoc prof	64.79 (158)	67.18 (61)	70.69	72.98
clerks	67.70 (76)	64.42 (321)	71.82	66.49
service/ sales	60.43 (213)	59.13 (271)	50.65	51.00
skilled agric/fish	61.07 (14)	68.46 (3)	59.96	79.17
crafts	59.58 (464)	59.56 (99)	51.12	51.99
machine operators	61.50 (138)	63.33 (37)	49.77	57.54
elementary	59.71 (201)	56.93 (370)	46.06	45.10
difference	$F_{8,1579}= 6.522$, $p<0.0001$	$F_{8,1456}= 10.726$, $p<0.0001$	$F_{8,1234}= 43.036$, $p<0.0001$	$F_{8,1161}= 46.237$, $p<0.0001$

Table 4.1.13: Distribution of pupils in types of primary school by grouped paternal occupation (percentages of occupation by school type presented in brackets)

SCHOOL TYPE	FATHER'S OCCUPATION			Row Total
	prof/ man	sales/ skilled	craft/ unskille	
Primary coed.	421	162	245	828
	(67.8)	(73.6)	(86.9)	(73.7)
Primary - boys only	74	12	12	98

	(11.9)	(5.5)	(4.3)	(8.7)
Primary - girls only	58	24	14	96
	(9.3)	(10.9)	(5.0)	(8.5)
Primary - composite	54	20	11	85
	(8.7)	(9.1)	(3.9)	(7.6)
Senior school	14	2		16
	(2.3)	(0.9)		(1.4)
Column	621	220	282	1123
Total	(55.3)	(19.6)	(25.1)	(100.0)

Table 4.1.14: Distribution of pupils in types of primary school by grouped maternal occupation (percentages of occupation by school type presented in brackets)

SCHOOL TYPE	**MOTHER'S OCCUPATION**			**Row Total**
	prof/ man	**sales/ skilled**	**craft/ unskille**	
Primary coed.	182	321	248	751
	(82.7)	(76.2)	(65.1)	(73.5)
Primary - boys only	13	26	43	82
	(5.9)	(6.2)	(11.3)	(8.0)
Primary - girls only	17	39	38	94
	(7.7)	(9.3)	(10.0)	(9.2)
Primary - composite	8	33	41	82
	(3.6)	(7.8)	(10.8)	(8.0)
Senior school		2	11	13
		(.5)	(2.9)	(1.3)
Column	220	421	381	1022
Total	(21.5)	(41.2)	(37.3)	(100.0)

Distribution of types of secondary school attended by parental occupation presents a slightly different picture. There was a predominance of top managerial and professional parents sending their children to schools with sixth forms and the older secondary (non-sixth form) schools. And, there was a higher proportion of children from crafts and unskilled parental occupations attending the single sex schools and newer secondary schools (see Tables 4.1.15 and 4.1.16).

Table 4.1.15: Distribution of pupils in types of secondary school by grouped paternal occupation

(percentages of occupation by school type presented in brackets)

SCHOOL TYPE	FATHER'S OCCUPATION			Row Total
	prof/ man	sales/ skilled	craft/ unskille	
Secondary - Coed (older)	52	20	37	109
	(23.3)	(24.1)	(20.3)	(22.3)
Secondary - Coed (newer)	28	16	46	90
	(12.6)	(19.3)	(25.3)	(18.4)
Secondary - Male Only	7	7	30	44
	(3.1)	(8.4)	(16.5)	(9.0)
Secondary - Female only	4	4	24	32
	(1.8)	(4.8)	(13.2)	(6.6)
Sixth form - Co-educational	132	36	45	213
	(59.2)	(43.4)	(24.7)	(43.6)
Column	223	83	182	488
Total	(45.7)	(17.0)	(37.3)	(100.0)

Table 4.1.16: Distribution of pupils in types of secondary school by grouped maternal occupation (percentages of occupation by school type presented in brackets)

SCHOOL TYPE	FATHER'S OCCUPATION			Row Total
	prof/ man	sales/ skilled	craft/ unskille	
Secondary - Coed (older)	41	50	19	110
	(24.6)	(28.7)	(15.2)	(23.6)
Secondary - Coed (newer)	9	26	32	67
	(5.4)	(14.9)	(25.6)	(14.4)
Secondary - Male Only	3	22	18	43
	(1.8)	(12.6)	(14.4)	(9.2)
Secondary - Female only	5	9	25	39
	(3.0)	(5.2)	(20.0)	(8.4)
Sixth form - Co-educational	109	67	31	207
	(65.3)	(38.5)	(24.8)	(44.4)
Column	167	174	125	466
Total	(35.8)	(37.3)	(26.8)	(100.0)

Insights into the distribution of children of various parental occupations into the types of primary and secondary schools is important because the distinct types of school may provide differential status and feedback to the child - especially with regard to the scores that the child obtains in the school.

Raw scores and CEE scores by type of school:

Secondary schools: End-of-term scores and CEE scores corresponded with prestige of secondary school such that the higher the status of the school the higher the average score. Table 4.1.17 displays the average end-of-term scores, CEE scores, and scores in the core curriculum subjects by type of secondary school.

Table 4.1.17: Average end-of-term, CEE, and core curriculum subject scores for types of secondary school

Type of school	**Average score**	**CEE score**	**English**	**Maths**	**Science**	**Social Studies**
Older	56.89	72.71	58.63	52.17	50.07	59.76
Newer	52.82	43.03	54.89	49.73	53.66	53.02
Boys	53.64	42.58	56.97	48.78	57.77	56.17
Girls	49.69	45.48	47.74	51.88	39.93	48.79
6th Form	60.46	82.83	62.45	61.36	66.93	66.58
Diff.	$F_{4,687}=17.739$ $p<0.0001$	$F_{4,657}=328.692$ $p<0.0001$	$P_{4,645}=14.492$ $p<0.0001$	$F_{4,659}=13.778$ $p<0.0001$	$F_{4,361}=23.204$ $p<0.0001$	$F_{4,585}=21.333$ $p<0.0001$

The table clearly shows that students in the sixth form schools were assigned higher average and separate curriculum scores than the other schools, and had a much higher CEE score profile (these were confirmed on post hoc Scheffe tests to the 0.05 level of probability). One anomaly arises in this table, girls in the girls-only school scored higher than the median on CEE but were assigned consistently low average scores overall, in English, science and social studies. The same pattern was found in a breakdown by form levels at both second form and fourth form. An explanation for this anomaly may reside in the significant social class differences of the children attending different types of secondary school. Students attending single-sex schools (especially the girls school) were more likely to come from a craft/unskilled (paternal) background than any of the other school types.

One further, but substantial, point should be made from this data. When the analysis focused solely on the schools with a sixth form, there were no significant differences found between children from the various paternal and maternal occupations with regard to the raw and standardised scores in the core and other subjects. There was a significant difference for the CEE scores that were taken before entry to secondary school (paternal occupation $F_{2,199}= 11.773$, $p<0.0001$, maternal occupation $F_{2,193}= 4.444$, $p<0.013$).

This finding was similar to the study undertaken in Trinidad and demonstrated a 'democracy among the elite'; once the child gained entry to the top schools, social class differences became non-significant.

Primary schools: Between types of primary school a number of differences were found (Table 4.1.18), although these differences were not as dramatic as those found between the secondary schools.

Table 4.1.18: Average end-of-term, CEE, and core curriculum subject scores for types of primary school

Type of school	Average score	CEE score*	English	Maths	Science	Social Studies
Co-ed	63.34	52.89	64.71	64.98	63.98	61.97
Boys	56.92	41.89	57.28	55.22	60.32	55.70
Girls	60.38	51.91	59.04	56.79	61.66	64.98
Compos	60.86	46.76	58.29	59.61	64.44	63.42
Senior	55.04	13.54	51.90	52.32	-----	59.23
Diff	F3,1080= 5.992 p<0.0005	F4,1082= 20.563 p<0.0001	F4,1498= 9.092 p<0.0001	F4,1502= 11.626 p<0.0001	N.S.	F4,1217= 3.181 p<0.013

*CEE scores obtained only from standard 4 year.

Table 4.1.18 shows that there were significant differences for the end-of-term and CEE scores between types of primary schools. There is no simple explanation for the differences, with the exception that the Senior schools produced consistently worse scores than the other types. Co-educational primary schools assigned higher average scores and produced better CEE scores than the other school types. Girl only primary schools assigned higher curriculum scores and produced higher CEE scores than equivalent boy only primary schools.

Pre-school attendance: Attending a pre-school was also found to be of significance in both end-of-term scores and CEE scores (average end-of-term F2.2134 = 23.829, p<0.0001; CEE F2.1705 = 54.805, p<0.0001). In both cases, those who attended pre-school had significantly higher scores than non-attenders and those who were unsure of attendance. It is worthwhile noting that pre-school attendance was significantly correlated to social class (rho= 0.2254, p<0.001); children were more likely to attend a pre-school if their parents worked in skilled and higher managerial positions (Table 4.1.19).

Table 4.1.19: Number and percentage of children that attended pre-school by grouped paternal occupation.

Pre-school Attend.	FATHER'S OCCUPATION			Row Total
	prof/ man	sales/ skilled	craft/ elem	

no	95	80	280	455
	(19.3)	(27.7)	(36.0)	(29.2)
unsure	36	34	136	206
	(7.3)	(11.8)	(17.5)	(13.2)
yes	361	175	361	897
	(73.4)	(60.6)	(46.5)	(57.6)
Column	492	289	777	1558
Total	(31.6)	(18.5)	(49.9)	100.0)

Table 4.1.19 shows that a greater percentage of children whose fathers were from a professional or managerial occupation attended pre-school than other paternal occupations; the difference between the grouped paternal occupations was significant $(X^2(4) = 94.201, p<0.0001)$.

Not only were children from an educated background more likely to attend pre-school, girls were more likely than boys to attend a pre-school (Table 4.1.20). The difference between number of boys and girls attending pre-school was significant $(X^2(2)=6.317, p<0.04)$.

Table 4.1.20: Number and percentage of boys and girls that attended pre-school.

Pre-school Attend.	**SEX**		**Row Total**
	male	**female**	
no	351	328	679
	(51.7)	(48.3)	(31.1)
	(33.4)	(29.0)	
unsure	150	153	303
	(49.5)	(50.5)	(13.9)
	(14.3)	(13.5)	
yes	549	650	1199
	(45.8)	(54.2)	(55.0)
	(52.3)	(57.5)	
Column	1050	1131	2181
Total	(48.1)	(51.9)	(100.0)

With whom does the child live? Especially in the Caribbean, personal development, educational attainment and occupation have been linked to the immediate family of the child. Research in Jamaica (Miller, 1986) refers to the 'marginalisation' of the black male as an explanation for low attainment in school and low

motivation to productively enter the work force. To provide insight into family support and structure all children in the survey were asked to identify with whom they lived. Children were most likely to live with both parents, and a majority of those not living with both parents lived with their mother (Table 4.1.21). Another way of expressing this information is that children lived overwhelmingly in households with their mother present (nearly 87% of children lived with both parents or mother only). Those living with father only was a small percentage, but brings the total number of children living with a natural parent (in the survey) to above 90%.

Table 4.1.21: With whom does the child live?

	Frequency	**Percent**
mother only	873	40.1
father only	76	3.5
both parents	1013	46.5
grandparents	101	4.6
other relatives	67	3.1
guardian	46	2.1
other	1	.0
	79	Missing
Total	2256	100.0

Simply identifying the parent with whom the child lives does not provide information as to how the living situation affects the school-based performance of the child. Table 4.1.22 shows distinct advantages for children who live with both parents as opposed to mother only or father only (confirmed with Scheffe post hoc analysis at the 0.05 level); and these results remained constant for both boys and girls as measured by their CEE, the standardised within-class scores and the raw within-class scores.

Table 4.1.22: Averages and differences on within-class and national scores for children living with mother, father and both parents

CHILDREN/ Scores	**ALL CHILDREN**	**MALES ONLY**	**FEMALES ONLY**
Common Entrance Live with:			
mother	51.89	47.69	55.95
father	50.90	46.06	57.68
both	62.04	56.95	66.54
Significance	$F_{2,1520}= 35.883$ $p<0.0001$	$F_{2,735}= 14.718$ $p<0.0001$	$F_{2,767}= 21.054$ $p<0.0001$
Standardised Live with:			

mother	-0.1070	-0.2874	0.0672
father	-0.0238	-0.1294	0.1318
both	0.1149	-0.0477	0.2785
Significance	F2,1932= 11.893 p<0.0001	F2,937= 6.485 p<0.0016	F2,972= 5.963 p<0.0027
Raw Average Live with:			
mother	57.64	54.27	60.84
father	59.27	55.38	65.23
both	63.51	60.56	66.44
Significance	F2,1932= 25.924 p<0.0001	F2,937= 14.256 p<0.0001	F2,972= 13.051 p<0.0001

As this project was undertaken in the Caribbean and researchers (see Drayton, 1995) have identified that children living with their mothers achieve well in school, a further analysis was undertaken to ascertain school achievement to assess the effects of living with father present. An initial analysis was undertaken for both girls and boys and explored achievement by the averaged raw classroom scores, standardised scores and CEE scores. The analysis also explored for differences within each of the core subjects. In each of these analyses, children who lived in a household with father present (either father only or father and mother) scored significantly higher than households without father present. Further analyses were undertaken to ascertain whether these findings characterised the attainment of boys and girls separately; findings replicated the significant results (above) for both boys and girls. It should be noted that father presence in the household was correlated with social class, and this confounds arguments asserting the positive effects of mother-dominated households in the Caribbean.

Who helps with homework? Aside from identifying with whom the child lives and the relationship of living with to school attainment, it is also important to note who works with the child to promote their school attainment. Over 73% of the children that responded to the question Who helps you with your homework?', stated that someone at home helped them (Table 4.1.23).

Table 4.1.23: Who helps the child with homework

Who helps	Percentage of children receiving help
Father	29.8%
Mother	50.3%
Brother	14.3%
Sister	18.2%
Other Relative	21.4%
Tutor	6.6%
Friend	20.2%

Guardian	7.4%

In line with whom the child was most likely to live with, results showed that the mother was the person who helped with homework most often. Parental help with homework was more likely to be found among parents from the higher levels of occupation.

Receiving help with homework was a general phenomenon. Only in some categories of help was there a relationship to the attainment of pupils. High attainers received proportionally more homework help from their fathers than mid and low attainers (X^2 (1)=10.187, p<0.006). Lower attaining children were more likely to receive homework help from brothers, sisters and friends. Homework help also varied with regard to the sex of the child. Fathers helped sons and daughters equally. Mothers gave slightly more help to sons than to daughters *(*X^2 (1)= 7.214*;* p<0.007) as shown in Table 4.1.24. Brothers, sisters and other relatives provided approximately equal amounts of help to boys and girls. Girls were more likely to receive help from their friends (X^2 (1)=9.447, p<0.002), and shown in Table 4.1.25.

Table 4.1.24: Help with homework by mother for son or daughter

HELP BY MOTHER	**CHILD**		**Row Total**
	son	**daughter**	
no	503	599	1102
	(46.40	(52.1)	
yes	581	551	1132
	(53.6)	(47.9)	
Column	1084	1150	2234
Total	(48.5)	(51.5)	(100.0)

Table 4.1.25: Help with homework by friend for boys or girls

HELP BY FRIEND	**SEX**		**Row Total**
	male	**female**	
no	892	886	1778
	(82.3)	(77.0)	
yes	192	264	456
	(17.7)	(23.0)	
Column	1084	1150	2234
Total	(48.5)	(51.5)	(100.0)

4. With the range of significant results provided, what is the relative contribution of each result to the overall performance of pupils and students in schools? This chapter has described significant differences in school attainment explained by sex, social class (occupation of father and of mother), preschool attendance, school type, with whom the child lives and who helps with homework. Stepwise multiple regressions were undertaken to ascertain the amount and significance of each of these variables in explaining standardised average end-of-term results, raw end-of-term results and CEE scores. These regressions have to be conducted separately for primary and secondary school students as patterns of school difference were not consistent among these age groups. A number of nominal variables had to be receded to allow for inclusion into the analysis.

Primary schools: Based on an imputed parametric distribution of data within the variables (sex of child, occupation of father, occupation of mother, type of primary school attended, pre-school attendance, with whom the child lives and who helps the child with homework), regressions were undertaken. Using CEE scores as the dependent variable over 25% of the variance (Adjusted R square) was explained; the predominant contributions to the variance were occupation of mother (18.5%), occupation of father (5.1%), and sex of pupil (1.5%). Using the standardised end-of-term score as the dependent variable (which excluded the type of primary school) only 9% of the variance was accounted for in the regression; the main contributions were occupation of mother (7.3%), occupation of father (1.6%). Finally, using the raw end-of-term score as the dependent variable (which allowed inclusion of type of primary school) 11% of the variance was accounted for in the regression; occupation of mother (7.3%), occupation of father (1.9%), with whom the child lives (0.8%) and sex of pupil (0.8%). All of these regressions show that success on national examinations and within-class assessment was not simply explained by girls achieving higher scores than the boys. The most significant amount of variance in these regressions was explained by parental occupations (especially mother) and this was followed by sex of the child and with whom the child lived. Figure 4.1.1 displays how the correlations between these significant variables contribute to classroom attainment.

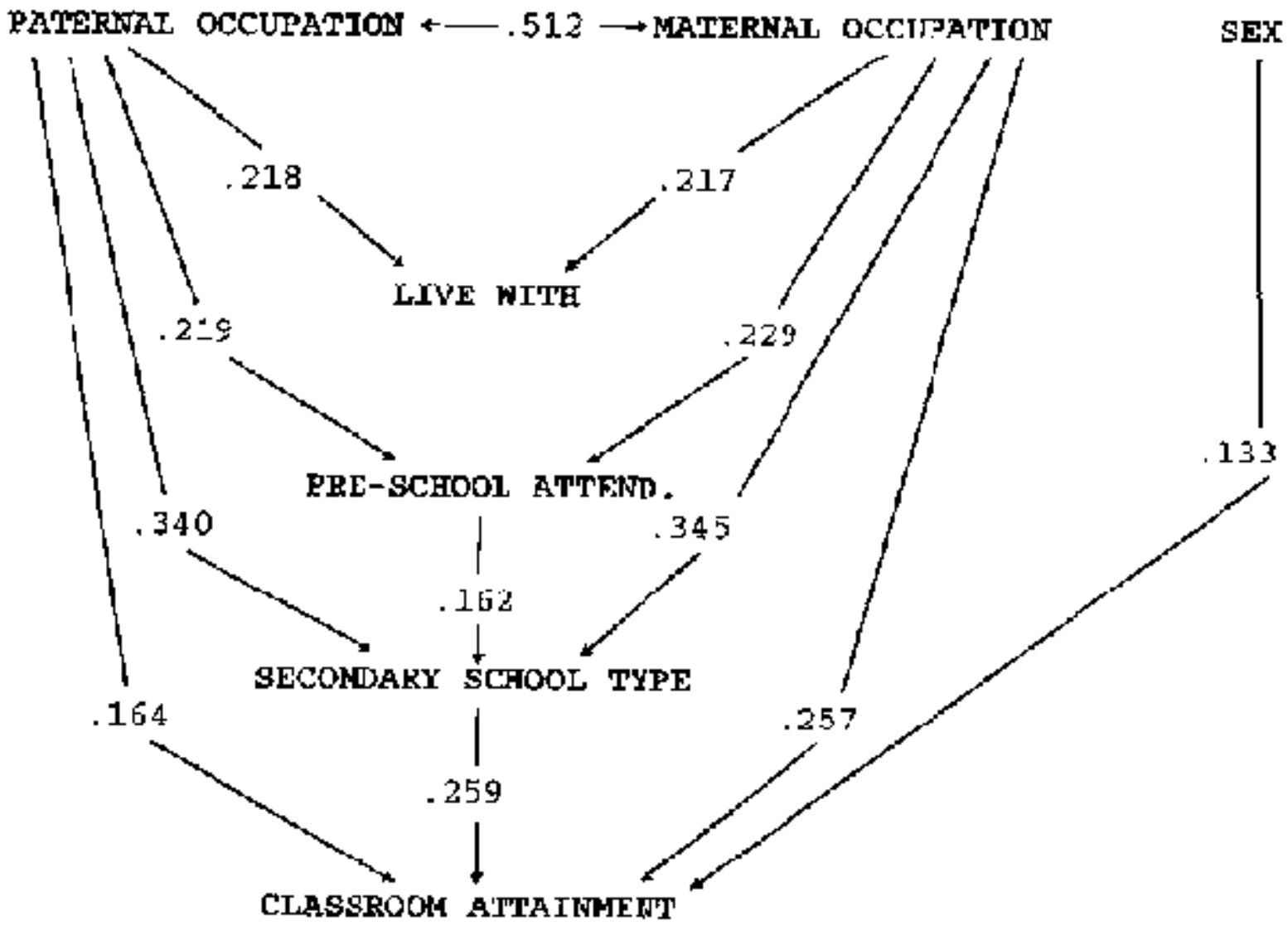
Figure 4.1.1: Correlations between key regression variables affecting primary school attainment

A profile of the most consistently successful child in primary school would be a girl whose mother and father (both) worked in professional/managerial positions and who lived with both parents.

Secondary schools: Regressions undertaken at the secondary level showed a different picture than the primary schools - especially because of the stratification of secondary schools and the different social class profile of the distinct types of secondary school. Variables used in these stepwise regressions included sex of child, occupation of father, occupation of mother, type of secondary school attended, pre-school attendance, with whom the child lived and who helped the child with homework. Using CEE scores as the dependent variable a massive 56.5% of the variance was accounted for; the main contributions to this variance were type of school - sixth form or not (44%), occupation of mother (12.2%), occupation of father (2%), sex of student (0.7%), and with whom the child lives (0.6%). Using the standardised end-of-term scores as the dependent variable, the explanation of variance was much more limited: only 6.8% of the variance was accounted for - and the sole contribution was made by the sex of the student. Finally, the raw end-of-term scores were used as the dependent variable and 14.5% of the variance was accounted for; the main contributions to the variance were type of secondary school (7.5%), attendance of pre-school (3.1%),

sex of student (2.9%) and occupation of father (1.1%). Figure 4.1.2 displays how the correlations between these significant variables contribute to classroom attainment.

Figure 4.1.2: Correlations between key regression variables affecting secondary school attainment



A profile of the successful student at the secondary level shows a female who is attending a sixth form school, whose parents work in high managerial/professional positions, who lives with both parents and who attended a pre-school.

Regressions for both primary pupils and secondary students showed that academic attainment was not simply explained by the sex of the child. Occupation of mother and father, whether the child lived with one or both parents, type of school attended and pre-school experience were all likely to have a strong effect on the success of the child.

Choice of schools for ethnographic case studies

Results of the quantitative survey in Barbados led to an agreement that much more insight into the

workings of achievement needed to be undertaken within classrooms. Case studies would allow us to focus on particular schools and students to ascertain how achievement is affected by sex of student, social class background and type of school. Within the funding limits of this project, it was agreed that the case studies would be limited to secondary schools. From the preliminary quantitative analyses in Barbados, the schools within which the case studies would take place include:

a) the female-only school which had average CEE scores but low end-of-term scores, noting that this school had a comparatively low social class intake; and

b) a sixth form school where there were no significant differences between boys and girls in core curriculum or CEE scores, yet there were more girls in the higher forms and a generally higher social class intake.

Within the limits of this project, these school-based case studies could not be as extensive as those reported from Trinidad. Case study researchers were only allowed part-time observations for periods between two and four months within the case schools. Reports of their findings are taken directly from their notes and, thus, could not be organised and interrogated as had been undertaken in the Trinidad studies.

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4.2 Barbados case study: Harbour, 6th form co-educational secondary school

SCHOOL DESCRIPTION AND GENERAL BACKGROUND:

The school observed is one of the oldest schools on the island. It was established in the early 1700s. Both its past history and its current reputation coincide with the agreement (among parents and educational professionals) throughout the island that Harbour school is the top secondary school in terms of academic results and one of the most difficult schools to gain entry. Harbour school has recently been made a co-educational school (1985). Previously it had been a male-only sixth form school.

Harbour school is co-educational, and is one of only four secondary schools on the island with a sixth form. The school is located in Bridgetown, the capital town of Barbados, but draws its students from all areas of the island. The teaching staff are very well qualified: the majority of the teachers have BA degrees; many have completed the University of the West Indies In-Service Programmes (Certificate or Diploma in Education); some of the teachers have completed MAs; and two teachers have completed doctorates.

Parents of children attending Harbour school are, in the main, highly educated and work in professional and managerial positions (see tables 4.2.1 and 4.2.2).

Table 4.2.1: Paternal occupations of students attending Harbour school

Value Label	Frequency	Percent	Valid Percent	Cum Percent
top managers	11	12.8	16.9	16.9
professionals	21	24.4	32.3	49.2
tech assoc prof	16	18.6	24.6	73.8
clerks	8	9.3	12.3	86.2
service/sales	4	4.7	6.2	92.3
skilled agric/fish	2	2.3	3.1	95.4

crafts	3	3.5	4.6	100.0
no occupation identified	21	24.4	Missing	
	86	100.0	100.0	

Table 4.2.2: Maternal occupations of students attending Harbour school

Value Label	Frequency	Percent	Valid Percent	Cum Percent
top managers	3	3 .5	4 .7	4.7
professionals	30	34 . 9	46.9	51.6
tech assoc prof	8	9.3	12.5	64.1
clerks	12	14.0	18.8	82.8
service/sales	2	2.3	3 .1	85. 9
skilled agric/fish	1	1.2	1.6	87.5
crafts	4	4.7	6.3	93.8
elementary	4	4.7	6 .3	100.0
no occupation identified	22	25.6	Missing	
	86	100.0	100.0	

The tables show that over two-thirds of the students have parents working in professional or managerial occupations and only fourteen percent of the students have parents working in skilled, craft and elementary labouring trades.

Entry to the school is extremely competitive. Entry to Harbour school is based on the highest results from the Common Entrance Examination, taken before leaving the primary school. While there is no specific minimum score that must be gained for entry, evidence reported in the Barbados quantitative study (Table 4.1.5) and this case showed a minimum 84%, a maximum 97.5% and an average 91%. Girls who entered Harbour school attained slightly higher CEE scores than boys; the quantitative study showed an average of 90.34 for boys and 91.79 for girls; but this was not a significant difference. It is commonly accepted in Barbados that if a child's CEE score was high enough, then the parental choice of school would be Harbour school. Further, the school is known for its success in the post 'A' level Barbados Scholarship Examination. Students scoring at the top level of this examination would be likely to win national and international scholarships to finance study at the university of their choice.

Harbour school, like its counterparts in Trinidad, is considered an elite or prestige school. Once students enter the school, a democratic equalisation was found to take

place among the students. As previously described, within-class and standardised within-class scores across Barbados showed sex and social class performance differences at all other types of schools. Within Harbour school, and similar prestige schools, there were no significant differences found between the attainments of boys and girls in any of the core subjects (English, mathematics and sciences). Similarly, there were no significant differences found between the performance of children of different parental occupations (paternal and maternal) in the core subjects as shown in the raw and standardised scores.

Harbour school was included as a case study because of the high performance of its students. It was also included to provide insights into classrooms where there was no significant evidence of performance differences between boys and girls.

Two classes were selected to be observed within this case study, one class each from second form and fourth form. The fourth form class was composed of high attaining mathematics students and the second form class was composed of mixed ability students. Profiles of the background of the year groups as a whole and these classes are presented below. Parents of children in the second and fourth forms at Harbour school were mainly employed in professional and managerial occupations (Tables 4.2.3 and 4.2.4), and this occupational profile is maintained in the two classes observed (Tables 4.2.5 and 4.2.6). Tables 4.2.3 through 4.2.6 show that the parental profiles of the parents of the case study students in Harbour school are very similar. One further description of the two classes shows that a majority of the students live with both parents.

Table 4.2.3: Paternal occupations of students attending Harbour school

Value Label	Frequency	Percent	Valid Percent	Cam Percent
top manager	3	5.3	6.7	6.7
professional	16	28.1	35.6	42.2
tech assoc prof	16	28.1	35.6	77.8
clerk	4	7.0	8.9	86.7
craft	1	1.8	2.2	88.9
machine operator	4	7.0	8.9	97.8
elementary	1	1.8	2.2	100.0
no occupation identified	12	21.1	Missing	
	57	100.0	100.0	

Table 4.2.4: Maternal occupations of students attending Harbour school

Value Label	Frequency	Percent	Valid Percent	Cam Percent
professional	6	10.5	11.3	11.3
tech assoc prof	22	38.6	41.5	52.8
clerk	12	21.1	22.6	75.5
service/sales	5	8.8	9.4	84.9
craft	1	1.8	1.9	86.8
elementary	1	1.8	1.9	88.7
unemployed	1	1.8	1.9	90.6
housewife	5	8.8	9.4	100.0
no occupation identified	4	7.0	Missing	
	57	100.0	100.0	

Table 4.2.5: Distribution of parental occupations for second form students (Percentage by parent in brackets)

Occupation	Father	Mother
Top Manager	1(4.8)	
Professional	8(38.1)	4(14.3)
Tech/Assoc/Prof	8(38.1)	9(32.1)
Service/Sales/Clerk	1(4.8)	8(28.5)
Craft	2(9.6)	1(3.6)
Elementary	1(4.8)	
Unemployed		1(3.6)
Housewife		1(14.3)

Table 4.2.6: Distribution of parental occupations for fourth form students (Percentage by parent in brackets)

Occupation	Father	Mother
Top Manager	2(8.3)	
Professional	8(33.3)	2(8.0)
Tech/Assoc/Prof	8(33.3)	13(52.0)

Service/Sales/Clerk	3(12.5)	6(24.0)
Craft	3(12.5)	3(24.0)
Elementary		
Unemployed		
Housewife		1(4.0)

The tables above represent a strong bias towards managerial, professional and trained occupations. The researcher was not able to collect information concerning with whom the students lived. We expect that it would be safe to assume that the two classes observed presented a similar profile as that presented in the full survey; 63.4% of students lived with both parents, 25.4% lived with mother only and 5.6% lived with father only.

Students in the classes observed scored very highly on their end-of-term examinations. Table 4.2.7 displays that the class averages for each of the two forms were above 70% on raw end-of-term tests and that the average CEE scores was approximately 90%. The examination and CEE scores were compared between boys and girls for each of the classes. Only in the second form English class was there a difference between the attainments of boys and girls (girls attaining higher than boys, $F_{1,28}= 4.811$, $p<0.037$). In mathematics and science there was no significant difference between boys and girls at second form and no differences in any subject at the fourth form.

Table 4.2.7: End-of-term averages for core curriculum subjects and average CEE percentages for second and fourth form case studies

Curriculum average	**Form 2**	**Form 4**
English	72.45	70.56
Mathematics	84.27	80.07
Integrated Science Biology	76.17	76.71
CEE average	89.40	91.33

The observer responsible for the Harbour school case study provided the following information. Virtually all of the information is taken direct from observational and reflective notes.

CLASS AND STUDENT PROFILES:

The classes involved in the study were forms 2.1 and 4. 1. Form 4.1 is a very

homogeneous group of students who are the highest achievers in the fourth year. They were selected via a rigorous examination, in which they competed for a limited number of places in an accelerated programme in Mathematics (the qualifying mark was 81%). This placement will ultimately lead to the University of Cambridge Advanced level programme which includes Mathematics and Further Mathematics. These students will initially be prepared to write the Caribbean Examinations Council General Proficiency Examination in Mathematics in June 1997, instead of June 1998 when it is written by all other fourth form students. Those students awarded a Grade 1 (the top grade) in the 1997 **CXC** Mathematics Examination will be enrolled in a programme to prepare for the University of Cambridge (Alternate Ordinary) Additional Mathematics in June, 1998. A grade 'A at that level will then qualify the students to take Further Mathematics as an A' level option. Traditionally, all or most of the students in this accelerated track crown their academic careers at Harbour with a Barbados Scholarship. Since the performance of these students is outstanding in most subject areas, it is anticipated that this class will be no different from its predecessors. All of their teachers agree that these students are highly motivated to do well academically, and are very high achievers. Teachers have described these students with statements such as:

> "Most of the pupils in this form will get grade 1 in all the subjects they take in the **CXC** exam."
>
> "About 75% of the students in this form will get Barbados Scholarships or Exhibitions when they reach upper sixth".
>
> "These children are really keen. They are very competitive amongst themselves".
>
> 'It is a pleasure to teach children who are so interested in their work".
>
> "An outstanding group of students".
>
> "What distinguishes this group of students is their level of commitment".

The students in Form 2.1 are of mixed ability. They are all relatively high achievers, however, since they would each have obtained a score that was higher than 86.5% in the Barbados Secondary School Entrance Examination (CEE). These students were randomly assigned to form classes in their first year, and were promoted to second form in the same groups. One student in this form is repeating the second year since he failed to obtain the minimum standard required in the promotion examination (he managed only 46%, and the pass mark was 50%). It must be noted, though, that examinations at Harbour are very rigorous, and it is very likely that this student would have performed much better in another school environment.

The female students in both the second and fourth forms exhibit a higher level of 'maturity' than their male counterparts, but this does not seem to affect academic performance at Harbour. For example, the male students in second form appear to be more playful and there is a tendency to clown around more than the females. In some cases, their responses appear to be flippant and designed for the amusement of the class. Yet, despite the apparent flippancy, there is an underlying brilliance in the responses. In the fourth form, male students seem to be more worried about the perception of the rest of the class than their female counterparts. For example, the male students appeared more embarrassed when they gave an incorrect answer than the female students. Students of both sexes in forms 4.1 and 2.1 were very highly motivated and regarded mathematics to be their favourite subject. Indeed, an overwhelming majority of students in both forms admitted to a decided partiality to mathematics.

Physical arrangements:

Virtually all curriculum subjects were taught in the form classroom. Only 4.1's biology classes were conducted in the Biology Laboratory. The students were taught biology in mixed groups which included students from the other fourth form groups (4.2, 4.3, 4.4 and 4.5). All second form classes, however, were conducted in their classroom and they were taught as a form group.

There was no particular seating pattern in either form for English and mathematics. The students selected their seating places on the first day of each term and they remained in the same location for the remainder of the term. Each student was seated in a chair at a desk. These desks were simply arranged in rows and columns, with boys and girls sitting together as a group. There was no segregation (self-imposed or otherwise) by attainment or sex. In none of the classes observed did the teachers organize group work, so observation of pupil performance was only able to take place in a formal group setting in English and mathematics. In the Biology Laboratory, the students were seated on stools along laboratory tables. They always worked in pairs if they were conducting an experiment. There was no special pattern in the arrangement of the pairs, which included both single-sex and mixed-sex pairs. The students were asked by their teacher to select a laboratory partner at a previous session and they worked in the same pairs for all of their experimental work. For all other work, the students remained with their partners but worked independently.

There was a greater degree of flexibility in the 2.1 integrated science classes than in their English and mathematics classes. During three of these observations, the students remained in their classrooms at their desks while the teacher performed her function didactically. In the other two classes, they were taken to a Chemistry Laboratory where the class conducted some experiments. The limited use of the laboratory for second form science lessons was necessary because of the unavailability of space. The teacher

suggested that it would have been highly desirable to have all integrated science classes conducted in a laboratory setting.

Class Attendance:

The attendance was excellent in all the classes observed. There were very few absences from school in either the fourth form or the second form. Approximately 80% of students in form 2.1, and 83% of students in form 4.1 had a perfect attendance record (never absent or late). In all the cases of absence, a letter of excuse was brought by the student.

The teachers:

All teachers in Harbour school were specialists in their particular fields. The mathematics teacher of 4.1 holds a PhD in Mathematics, the English teacher a BA in English and an MA in Education. The biology teacher holds a BA in Biology. All three teachers were trained in the University of the West Indies In-Service Diploma Programme. Likewise the teachers of Form 2.1 all hold first degrees in their respective disciplines (English, mathematics and biology) and were all trained in the In-Service Diploma Programme. With the notable exception of the mathematics teacher of Form 4.1, the teachers were all female.

When interviewed, the teachers admitted that they enjoyed teaching very much. They were all career teachers and, indeed, the English and mathematics teachers of form 4.1 each had over twenty-five years experience in the profession. The 4.1 biology teacher and the mathematics and English teachers of form 2.1 each had over ten years experience. The least experienced of the teachers was the integrated science teacher who had just over six years experience.

THE OBSERVATIONS:

The observations were conducted in these two forms over a period of approximately six weeks; between November (1996) and February (1997). Observations were not continuous because of the intervention of the Christmas holidays. Both students and teachers were briefed about the method and purpose of the observations. The students were observed during their mathematics, English and science classes. Form 2.1 studied integrated science. Form 4.1 studied physics, chemistry and biology as separate disciplines. Since most of the 4.1 students studying biology were in the same group, the science observations were conducted during their biology class. Five observations per curriculum subject area were made for each form class; a total of fifteen observations in Form 2. 1 and fifteen in Form 4.1.

Teaching Style:

It appeared that all the teachers involved in the observations taught in a didactic style; they generally utilised the "talk and chalk" method of instruction. The teachers either lectured to the students and outlined the points made on the blackboard or used questioning techniques and recorded a cross section of the answers on the blackboard. Occasionally, the lessons took the form of class discussion and student responses were recorded on the blackboard. In mathematics classes, the teacher worked examples of problems on the board and explained the methodology to the students. Explanations were frequently given on a one-to-one basis, especially for students who had problems with the concept being taught. No other teaching methods were observed during these sessions. There was hardly any group work but, in spite of this, the students appeared to perform at a very high level.

The English Classes:

4.1 English: In the observations, the teacher skilfully utilised questioning techniques and all the students in the class operated at a very high level of analysis. Both male and female students appeared to be highly motivated and the atmosphere was a very competitive one. All English classes observed with this group involved some element of discussion; these discussions were highly structured and focused toward the teacher. A question would be asked by the teacher and the students would raise their hands if they felt that they could respond. The teacher would then call on a student to answer or to rebut a statement (made either by herself, or by another student). The students were not allowed to speak unless they were standing, and no-one was allowed to comment without being requested to do so by the teacher. Frequently, the teacher would interject a provocative statement which would immediately trigger-off further discussion by the class. Some students (both male and female) appeared to be intimidated by the teacher, and were hesitant in their responses. Generally, though, responses were quite insightful. The students who seemed to be intimidated were the shyer, less confident boys and girls. Most students did participate. (Researcher's Note: After all, this was a homogeneous group and all students were very high attainers.)

In these classes, both male and female students were given many opportunities to express their opinions. On the whole, the females appeared to be more articulate and confident than the males, and were willing to state their opinions and respond to questions even if the answer was wrong. The male students tended to be more analytical and concise in expressing their opinions, whilst the females tended to be more long winded and garrulous. The girls entered into detailed explanations with several examples; trying to impress the teacher with their knowledge. On the other hand, the male students gave the appropriate responses with few, if any, embellishments.

All students seemed to be very well prepared for the classes. Textbooks and other study material were always ready, and homework was usually done. At the end of each class, the teacher would give a passage to prepare or questions to answer. The next lesson began with a discussion of the homework that had been done. The teacher taught English language and English literature simultaneously, using passages from the literature texts for comprehension and for practice in grammar. She used the blackboard a great deal, outlining her main points there as she taught.

Because of structure of this class, it was difficult to observe friendship or other groupings. The teacher was a very strict disciplinarian and the students were not allowed to interact with each other on an informal level. The lessons were rigid and formal. Students appeared to think that they would be punished if they were inattentive. This, however, did not appear to restrict their academic performance or their level of interest in the lessons being taught. The students seemed to enjoy and understand what was being taught. Their oral and written participation reflected this enjoyment. The students were self disciplined and exhibited a very high level of maturity. The students even proceeded with their work if a teacher was absent from school.

2.1 English Class: There was a greater degree of flexibility in this class than in form 4.1. The students seemed to feel very comfortable with their teacher. It was obvious that they respected her, but they certainly did not fear her as appeared to be the case in 4.1. There was a great deal of "chalk and talk" in this class and the teacher made considerable use of the blackboard. In one English literature class, the teacher dictated notes; they were told to learn the notes for homework and that they would be tested on the contents of the notes in the next lesson.

In this class there was a great deal of teacher-student and student-student interaction. In the note giving lesson, for example, it was not uncommon for students to ask each other to repeat something that the teacher had said. Occasionally, the students raised their hands, but generally their questions and comments were of a spontaneous nature. Only one class discussion was observed in this form; it was noisy, with a great deal of student-student interaction as the students supported or rebutted each other's points. This is not to deny that a lot of learning did not take place, since some insightful comments were made about the text being studied. Both male and female students were articulate and uninhibited in their contribution to class discussion, and the teacher encouraged this. The observer attributed the noise level to:

(1) the youthful exuberance of these twelve year olds;

(2) there was more informality in these second form English classes than there was in fourth form;

(3) these students were not being prepared for an external examination - there was less pressure to complete the syllabus.

In her instruction, the teacher tended to lecture and write on the blackboard a great deal. Students either responded to questions orally or they wrote the answers in their exercise books. Occasionally, a pupil was invited (sometimes volunteered) to write the answer on the blackboard. The teacher gave a lot of positive reinforcement to students, congratulating them when they were correct and encouraging them to do better next time if they were incorrect.

A few (not more than five) of the students in this form exhibited some disorganisation in the form of homework not done, a forgotten textbook, or a request to borrow a ruler and pencil. This only occurred on one occasion per student (three girls and two boys), and therefore cannot be regarded as endemic in the group. In each case, the teacher remonstrated with the offender and elicited an apology and a promise to be better prepared in future. No punishment was given by the teacher. The teacher informed me that her approach was developmental rather than punitive. She wanted to inculcate self-discipline and organisation into the children. She confided that she would probably give a detention if the offence was repeated in the near future. The students all seemed to enjoy their English class and it appeared that both male and female students were performing very well.

The Mathematics Classes

4.1 Mathematics Class: This class was taught in the traditional method with the teacher explaining how to work the problem (demonstrating on the blackboard) and then giving the students practice in working similar problems. As the students worked the problems, the teacher walked around the room giving assistance to those students who required it. The students perceived themselves as an elite group and aimed to maintain their academic superiority. Students would co-operate with neighbours frequently, assisting each other if one encountered any difficulty. Both male and female students operated in this manner. I did not observe any differences between the sexes in this respect, since students sitting in the same geographic area seemed to be involved in the interaction. If neither could assist the other, they would ask the teacher, and he would either demonstrate the problem on the blackboard or give students individual assistance. This was the routine in each of the five mathematics classes observed.

Student performance and high achievement was partly motivated by their determination not to be transferred to another mathematics class. These students were very interested in, and serious about their work. They were held in high esteem by teachers and other students, so the pressure on them to perform is great. Some students not in this class were overheard making comments about 4.1's status (at various times). Comments

included a mixture of jealousy and awe:

> 'We can't compete with those 4.1 students. They are nerds."
>
> 'Those students in form 4.1 think that they are more important than anyone else".
>
> "I wish I had got a few more marks in the maths exam so that I would be in 4.1."
>
> "I am going to private lessons so that I can do CXC in fourth form. I want to do Advanced Maths, in fifth form." (Researcher's note: Some students, who did not achieve the minimum qualifying mark to enter 4.1, pay for private tuition and sit CXC Mathematics Examination as non-school candidates in fourth form. If they obtain a grade 1, they are allowed to enter the accelerated group in fifth form. They use this method to circumvent the system).

From the observations, the class was performing very well. The sessions were orderly and well structured, but there was a slight 'tinge' of informality as well. The teacher explained the problems and worked them on the blackboard. Both male and female students wrote copious notes about the procedure employed and copied the worked examples from the blackboard into their exercise books. In this class, the male students tended to be more dominant and more confident than their counterparts, answering more questions than the females and showing signs of pride when they were correct. There was much student-student interaction in this class. Students did not seem averse to assisting each other. In all classes, the students were very well prepared. Homework was always completed. It was obvious to the observer that this was a very disciplined group of students.

An interesting strategy was adopted by the teacher. The students were given the answers to the problems beforehand. As they completed a question, the students checked their own work. The teacher later explained that in so doing, he was training the students in self-discipline; no purpose would be served if they forged their answers. He contended that it would be time consuming for him to check answers in class, and that time would be better served either introducing a new topic or doing remedial work if a topic previously introduced was imperfectly understood. He further suggested that the objective was to give practice in problem solving. If there was any difficulty the students could come to him at any time to have it resolved. Apparently, the strategy worked; the students performed very well in the one test that the observer was shown.

In all the mathematics classes observed, the homework (which was sometimes quite

voluminous) was always completed in a timely manner. As the teacher walked around the class, he would ask to see the homework that the students had previously done. In this class the level of performance of both male and female students was very high and the students were all very proud of their achievement.

2.1 Mathematics Class: The students in this class were lively. They appeared to enjoy the mathematics classes even though the teacher was a strict disciplinarian and insisted on order and structure. The teacher worked one or more problems on the blackboard, explaining the procedure as she went along. She then gave similar problems to the students to be worked in their exercise books. The female students tended to ask for the teacher's assistance more frequently than the male students did. Even the brighter female students called on the teacher for help more often than the male students.

As they worked, the teacher walked around the class, giving assistance when it was required. Unlike the procedure in the 4.1 group, students were not allowed to assist each other. If a problem was encountered, the student was encouraged to put his/her hand up and the teacher would quickly respond. When asked why she discouraged student-student interaction and assistance, the teacher responded that the form was very talkative and would not necessarily confine the interaction to discussion related to mathematics. She insisted that learning could only occur in a very tightly structured environment.

In this class, students were given the opportunity to showcase their knowledge and understanding of the topic studied. As they completed the work set by the teacher, she would invite someone in the class to come to the blackboard and work a problem and explain the process. If any difficulty was encountered by that student, someone else would be invited to help and complete the problem. In this way, the students had the opportunity to consolidate their own knowledge of the procedure by explaining it to the class. During the five observations in this class, every student was given the opportunity to use the blackboard at least once. Both male and female students seemed to enjoy this type of activity. In most cases, the problems were worked correctly.

Homework was given at the end of every lesson. With very few exceptions, it was completed when the teacher had requested it. The students were generally well prepared for this class and their performance was of a very high standard. Homework was mainly done on an individual basis. The students who were asked suggested that mathematics was not difficult and that very little assistance was necessary. If there was any difficulty with a particular problem the students would discuss it among themselves just before the lesson. If no-one in the form understood how to proceed, the teacher would be asked for assistance. It must be noted that this teacher is regarded by her peers as a specialist in junior school mathematics and most of the students in the accelerated track have been exposed to her teaching at one time or another.

The Biology Class:

4.1 Biology Class: The teaching method was largely traditional with a great deal of 'chalk and talk'. All biology classes in this group were conducted in a laboratory setting, even if experiments were not being conducted. Lectures were the most frequently used method of instruction.

In three of the classes observed, students conducted experiments in pairs. This was the nearest example of group work that was observed in any class. There were eighteen students in the group (ten boys and eight girls) and students had the same partner for each experiment. Some of the partnerships were single-sex and others were mixed-sex. Students selected their partners at the beginning of the academic year and maintained the partners over the year. On one occasion, the teacher gave instructions for the experiment and wrote them on the blackboard and the students then followed these instructions. On the other occasions, the teacher selected the experiments from the students' textbook. As the students did the experiments, the teacher walked around the class giving assistance. The students recorded the findings of the experiments in their laboratory books, and these were collected by the teacher at the end of the lesson. The students appeared to like undertaking experiments. The teacher later reported that the experiments were, on the whole, accurate and that the work produced by this group was of a very high standard. The pairs which comprised two females seemed to work at a slightly slower rate than the ones with a male and a female. The explanation given by the teacher for this phenomenon was that girls were more meticulous than boys and they checked the instructions more often than the boys. This meticulous nature tended to slow them down.

When the teacher was not supervising an experiment, she tended to lecture to the students who remained at the tables in their pairs. As she spoke, she outlined her points on the blackboard. Sometimes she illustrated her point with a diagram, which the students meticulously copied in their exercise books. Sometimes, the students made notes as she spoke, but this was generally the female students who did this. During one lesson, the teacher dictated notes about genetic engineering to the group. Students copied these notes in their exercise books. In this class many male students and a few female students appeared to be bored, and the occasional stifled yawn was observed. From this, the observer inferred that the students preferred a methodology in which they were more actively involved. However, on the whole, the students appeared to like biology, but their level of interest did not seem to be as great as it was in mathematics and English.

The Integrated Science Class

2.1 Integrated Science Class: The teacher of this class was very lively and the students

obviously liked her. There was a great deal of informality and student-student interaction in class. As with the other disciplines observed, the traditional methods of note-giving, lecturing and use of the blackboard were generally employed.

On two occasions the students were taken to the chemistry laboratory and simple experiments were conducted. In the laboratory, students were seated on stools at the laboratory tables. The students worked in groups of four and followed the instructions given in the textbook for the experiment after demonstration by the teacher. The teacher explained what she was doing as she worked. The students were permitted to interrupt her with questions. She patiently answered each question. For example, in an experiment 'changing electricity into light', aluminium foil was required. One male student enquired whether something else could be substituted for the foil, eg. wire or string. Another student asked why the size of the foil had to be so exact, i.e. if it could be larger or smaller. It appeared to the observer that the male students asked more questions than the female students; the girls seemed to be more interested in following the procedure in their textbooks and in writing notes as the teacher spoke. The male students paid little attention to the text and watched the teacher's activities very closely. The students then did their experiments in their groups amid much chat and laughter, particularly if an experiment failed. When failure occurred, the group was allowed to repeat the procedure. The students, however, enjoyed these activities and much learning took place. Indeed, some of the male students announced their intention of trying similar experiments at home, and the teacher encouraged this.

The students always seemed well prepared for this class. On the occasions when the teacher requested submission of homework it was always ready. Both male and female students were equally well prepared and the teacher did not appear to distinguish between the sexes in her interaction with the class. In cases where the teacher was in the classroom lecturing to the students, they freely asked her questions if they did not understand a particular point. The teacher took the time to go over the work. The test results indicated that the students learned what they had been taught.

SUMMARY POINTS:

1. This school presents a culture and history of high attainment. All of the teachers had BAs and were trained for teaching and many had higher degrees. Children attending had gained the highest level of CEE passes, and were aware that high levels of attainment would be rewarded with high examination passes and scholarships. Within this culture of high attainment, all students appeared to be self-disciplined and participated fully in school and homework. There were very few differences between the examination performances of males and females and children from different social classes.

2. Teaching was didactic, strongly controlled by the teacher. Teachers showed their commitment to the school and students by their encouragement of all students and no evidence of teacher-less time.

3. All students were active participants; there was no evidence of teacher preference for particular students (by attainment or sex). Their school work and behaviour showed high levels of motivation -including fall submission of homework and virtually no incidents of misbehaviour, bullying or teasing.

4. While there were some differences in the behaviour of boys and girls, there were many instances where they worked together. Where students sat was decided by the students, but there was no evidence of segregation between boys and girls. A number of examples showed boys and girls sharing and discussing information co-operatively. Male and female approaches to class work showed some differences, especially as girls presented longer, more meticulous answers and boys presented short, analytic answers (similar to descriptions of UK students identified by Murphy & Elwood, 1997).

5. The informality of the second form English class brought out the only performance difference between boys and girls; girls were more responsive in class and attained higher scores on their examination.

4.3 Barbados case study: South, single sex, female-only (newer, non-sixth form) secondary school

SCHOOL DESCRIPTION AND GENERAL BACKGROUND:

South school was established approximately thirty years ago, shortly after Barbados gained its independence. South was named after an eminent local educator; it is one of the fourteen 'newer secondary' schools in Barbados. It is one of two female-only secondary schools in Barbados, but will soon be the only one of this type (the government decided (late 1970s) that most secondary schools should be co-educational). The other female-only secondary school is currently being relocated into a new parish (school district); where it will be renamed and made co-educational.

When South was officially opened in 1964, it had a roll of approximately 300 girls, all between the ages of 11 and 12 years, and a staff of 13. **Over** the years there has been a substantial growth of the school's population and staff. The current roll is approximately 1140 students and the teaching staff is 70.

South is located in Bridgetown. It draws students from all areas of the island. In the quantitative survey of Barbados (chapter 4.1) the occupational profile of the parents of girls attending the school showed a low proportion of professional and managerial positions, similar to the profile of the newer secondary co-educational and the male-only schools. This profile of a low proportion of professional and managerial parents is very different from the profile found in the older secondary co-educational or sixth-form schools. The profile of parental occupations of students attending South school (established in the quantitative survey) are displayed in Tables 4.3.1 and 4.3.2. Of the girls who provided information on paternal and maternal occupations, a majority of the parents worked in crafts and unskilled (elementary labouring) positions.

Table 4.3.1: Paternal occupation of students attending South school

Value Label	Frequency	Percent	Valid Percent	Cum Percent
top managers	2	3.4	6.3	6.3
tech assoc prof	2	3.4	6.3	12.5
service/sales	4	6.9	12.5	25.0
crafts	15	25.9	46.9	71.9
machine operators	4	6.9	12.5	84.4
elementary	5	8.6	15.6	100.0
no occupation identified	26	44.8	Missing	
	58	100.0	100.0	

Table 4.3.2: Maternal occupations of students attending South school

Value Label.	Frequency	Percent	Valid Percent	Cum Percent
professionals	5	8.6	12.8	12.8
clerks	1	1.7	2.6	15.4
service/sales	8	13.8	20.5	35.9
crafts	6	10.3	15.4	51.3
elementary	19	32.8	48.7	100.0
no occupation identified	19	32.8	Missing	
	58	100.0	100.0	

When considering the parental occupation profile of students attending South school, it is important to note that most of the girls lived with mother only and there were few

fathers present at their homes (Table 4.3.3).

Table 4.3.3: With whom the child lives at South school

Value Label	Frequency	Percent	Valid Percent	Cum Percent
mother only	30	51.7	51.7	51.7
father only	1	1.7	1.7	53.4
both parents	21	36.2	36.2	89.7
grandparents	3	5.2	5.2	94.8
other relatives	2	3.4	3.4	98.3
guardian	1	1.7	1.7	100.0
	58	100.0	100.0	

The percentage scores gained on the CEE ranged from 31 to 68.5, with a mean of 45.5. This range and average was, comparatively, better than the boys-only and newer co-educational schools in the quantitative sample, but was substantially lower than the older non-sixth form co-educational and the sixth form co-educational schools.

With regard to the case study carried out at South School, two classes were randomly selected for observation. One class each was observed at second form and fourth form. Choice of these year levels allowed for comparability with the quantitative survey. The second form class had completed a year at the secondary school and should have acclimatised to the routines of the school. The fourth form class was selected to provide information on experienced students and their performance. The second and fourth form classes were composed of mixed ability students. The profile of their paternal and maternal occupations generally matched the profile established in the quantitative survey (Tables 4.3.4 and 4.3.5).

Table 4.3.4: Paternal occupations of the observed classes

Value Label	Frequency	Percent	Valid Percent	Cum Percent
professional	1	1. 8	2.7	2.7
tech assoc prof	4	7.1	10.8	13.5
clerk	5	8.9	13.5	27.0
service/sales	3	5.4	8.1	35.1
skilled/agri/fish	10	17.9	27.0	62.2
craft	4	7.1	10.8	73.0

machine operator	6	10.7	16.2	89.2
unemployed	4	7.1	10.8	100.0
no occupation identified	19	33.9	Missing	
	56	100.0	100.0	

Table 4.3.5: Maternal occupations of the observed classes

Value Label	Frequency	Percent	Valid Percent	Cum Percent
tech assoc prof	6	10.7	15.4	15.4
clerk	1	1.8	2.6	17.9
service/sales	4	7.1	10.3	28.2
skilled/agri/fish	3	5.4	7.7	35.9
craft	2	3.6	5.1	41.0
machine operator	6	10.7	15.4	56.4
elementary	11	19. 6	28.2	84.6
unemployed	3	5.4	7.7	92. 3
housewife	3	5.4	7.7	100.0
no occupation identified	17	30.4	Missing	
	56	100.0	100.0	

Further aspects of information concerning the profile of the two classes include: CEE scores ranged from a minimum of 22 to a maximum of 66.5, with an average of 47.3 percent. The girls attending the school lived predominantly (55%) with their mothers only and just over a quarter lived with mother and father (Table 4.3.6).

Table 4.3.6: With whom does the student live?

Value Label	Frequency	Percent	Valid Percent	Cum Percent
mother only	31	55.4	56.4	56.4
father only	3	5.4	5.5	61.8
both parents	15	26.8	27. 3	89.1
grandparents	5	8.9	9.1	98.2
guardian	1	1.8	1.8	100.0
	56	100.0	100.0	

There were no significant differences in the students' core curriculum scores due to occupation of father or mother in either of the classes, and there were no significant differences between core scores explained by parents or relations that the student lived with (although there were slightly higher means for girls who lived with both parents).

CLASS AND STUDENT PROFILES:

The description of the school and student background identified that South was a female-only school with its clientele coming from a (mainly) working class background. While the students' CEE scores were similar to the male-only and other newer secondary schools (in the quantitative survey, Table 4.1.5), these scores were significantly lower than those found in the older secondary and sixth form schools. Further, the average within-class scores for the girls who attended South were lower than all other types of secondary school overall and in the specific subjects of English, science and social studies. Observations were undertaken in South during a limited time period, between February and March 1997. Information, therefore is more limited than the previously reported case studies.

Both of the classes selected for study were composed of mixed ability girls. Upon entry to South in the first form, girls were randomly assigned to form classes and these classes remained constant (in the main) throughout the further years in school. All teaching was undertaken in these form classes. As with Harbour school, the second form was chosen because the students had completed a full year in school. The fourth form was selected as it was a pre-examination year and the girls would have made their option choices for CXC examinations. Data was collected from 55 girls.

Class Attendance:

Non-attendance over the last term varied among the girls, from full attendance (nine girls) to thirty days missed (one girl). Average number of days missed in school over the last term was 4.4; girls in the second form missed an average of 3.9 days and girls in the fourth form missed 4.8 days. Lack of attendance was not correlated with attainment in any of the subjects nor was it correlated with parental occupations or with whom the girl lived; it appeared to be a general phenomenon among the girls.

Physical arrangements:

The form classes were taught, mainly, in their form rooms. Seating was very traditional with individual chairs and desks lined-up in rows facing the teacher's desk. Science classes were taught in laboratories and seating was on stools. The placement of seats was physically arranged by the teachers. Within class, though, the student was free to

sit wherever she wanted. It was only in rare cases that a teacher restricted a girl's choice of seat. If the teacher believed that by sitting in a particular seat, a student was preventing someone or was being prevented from paying attention during lessons, she would move the girl. Girls tended to sit with friends of similar classroom attainment.

Importance of School Work:

From the observations, the researcher made a number of summary points. She noted that it appeared that many of the students were satisfied with their school work. Satisfied in this sense meant that students were cognizant of their own ability and understood that their attainment (performance) was a result of the amount of effort they were willing to make in school. When classroom results were not as expected, strategies to improve their performance were brought into play. These strategies were mainly information-based as they attempted to gain more information and feedback through interacting with teachers or friends. Thus, students tried to gain assistance by the following means:

> teachers are asked to explain farther;
> those students who understood the set work were asked to act as mentors and explain to the other students; and
> at times, friends or an older brother or sister were asked to assist the particular student.

All of students looked forward to graduating. A number of them told the researcher that their school attendance and studying will help them to achieve their occupational goals.

Homework:

Homework was based on the syllabus dictated by the Caribbean Examinations Council and other examining boards. Homework assignments took various forms, but assignments were due in a specified time period.

The attitude of students in 2.1 to homework was generally positive. A few students did not limit themselves to the homework set. They did additional homework; however, this was not the general rule. Out of a form of 28, six students stated that they did additional homework. These students were identified as the high attainers who consistently did good work in class. Some typical comments made by these high attainers:

> "I do a lot of work in school and then, when I go home, I have a lot to do as well."
> "Doing this amount of homework cuts down on the time I leave for other things besides school work, but that is OK."

In the fourth year, students were not so concerned about the importance of homework. A number of students told the researcher that homework was necessary but that too much was tiring. Some admitted that they received assistance from older brothers and sisters.

In the second form, students spent on average one to two hours a night doing homework. For the upper school, time spent doing homework generally depended on what was set. The majority of students recognized that homework was necessary for scholastic success. They told the researcher that there were some problems associated with homework. Some complained that the volume of homework set was too great. For the younger students, homework may impact on their 'playing' time. The majority of students stated that they had a weekly time plan for their school work and studied for at least one hour every night.

The students appeared to have a strong sense of self-confidence in school. Most, as previously identified, attended classes regularly and were prepared for class sessions. Absence from classes without permission and failure to do homework were penalized. Students who were inconsistent with the completion of their homework were set detention with the specific purpose of homework completion.

Study Techniques:

The predominant mode of study among the students was independent study (pursuing assignments by themselves). There was little evidence of study or support groups developed by the girls. Second formers told the researcher that they had no particular modes of studying. The fourth formers gave reasons why they studied in groups or alone. Those who liked working alone stated that:

a) they could comprehend better;

b) there are too many conflicting ideas when you work with a group;

c) if forced to work in groups, there is also not enough time to understand what is going on and the weak student suffers as a result; and

d) they experience no annoyance from other students when working alone.

Group study, when it occurred, was usually based on friendship. There appeared to be some insecurity provoked by working with a number of other students; it was threatening if the student was unable to contribute to the group or made mistakes. Only

if a student knew her subject matter very well, did she have the security and willingness to act as group leader - to pass on her knowledge to other students in the group. Attitudes to group study and support were varied as shown in the following comments:

> 'I prefer to be by myself at times, without anyone shouting at me if I do not understand."
>
> 'I like to work by myself at times as I prefer to find out things for myself. However it depends on the mood I am in."
>
> 'If there is something I do not know then when I join a group, the work becomes easier because I learn from someone in the group who knows."

Thus, there were some students who felt that if they studied in groups:

> 1) the brighter student could help the weaker ones to understand a difficult problem, and
> 2) students learn to co-operate and share information.

On the whole, students preferred to work and study by themselves. This attitude to work was probably generated and supported by the didactic nature of teaching in school and lack of teacher supported group work sessions.

Teaching Style:

From the observations, the researcher noted that teachers maintained control of classroom knowledge and behaviour in a didactic fashion. Consistently, their approach to teaching and learning was characterised by 'chalk and talk'; telling students what they need to know, writing information on the blackboard and questioning the whole class to confirm knowledge or to obtain suggestions. Teachers often explained the information for the session and then, in some instances, gave examples. There was some discussion, but this discussion generally confirmed the presented subject matter rather than offering new and challenging insights or approaches. This approach was true for all the curriculum subjects observed. The chalkboard was used in all classes at one time or another.

Teachers sought creative ways to put subject matter across; at times using examples from around them. The researcher attended one science lesson and found herself explaining how 'sugar cakes were made'. When teachers tried to encourage discussion, discussion generally took place between teacher and student rather than among students themselves. At times this discussion was very lively. Teachers tried to encourage a supportive interaction, again this was between the teacher and students rather than

among students. Students were given the opportunity to share their knowledge or understanding with the teacher and mediated through the teacher with other students in the class. Teachers tended to refer to this mode of question and answer and sharing information with the class as 'co-operative' although there was little evidence of student-student discussion or structured co-operative learning tasks. Generally, students were not afraid to ask questions of the teacher if they were unsure. They were free to disagree with what the teacher or other students said. All students were given the opportunity to participate by the teacher, and this usually took the form of answering questions and working out problems and answers on the chalkboard (especially in the Mathematics class).

Relationships with the Teacher:

Relationships between students and teachers were generally good. Teachers invited questions from the students. The ensuing teacher-student interaction showed mutual respect rather than fear. Students, whether they were considered high or low attaining were not afraid to ask questions and to tell the teacher if they did not understand a particular topic. The teachers gave guidance at all times. When students didn't understand, the teacher explained.

Students readily took an active part in lessons. They answered questions when asked and sought information where it was necessary to do so. Whether or not a teacher was male or female, the relationship was one which acknowledged that the teacher was in charge of the class. Yet the approach of the teachers encouraged students to feel comfortable.

Pressure to Succeed:

In the second form, students all agreed that they would like to succeed. Yet, observations of and conversations with the students showed that the girls did not have any particular strategies to encourage this success nor did they feel any great need to show that they were succeeding. Their actions with regard to preparation (having a set time-table or programme for extra study) was not evident. The disconnection between ambitions for success and practical strategies may, perhaps, stem from the fact that many of the students had not set any career goals. They were not overly concerned for or had any great passion to succeed. These younger students appeared to think that a decision with regard to career choice would/could be made sometime in the future:

> "I do not know what my career will be."
> "I hope by the time I am ready to choose my (CXC) subjects, I will know what I want to do."

Even in cases where students at this level suggested careers which they would like to pursue, it did not appear that they were convinced this was the path which they would ultimately take. This absence of self motivation and being unsure of their career path was attributed by teachers to the fact that students came into this school with feelings of insecurity and worry about their ability to succeed (as seen by their relatively low CEE scores and previous examination results that characterised the school). Teachers told the researcher that they had made efforts to inspire students but had a particular problem in trying to dispel student feelings of low self-esteem.

In the fourth year, students felt there was too much pressure being placed on them to succeed. They saw the relevance of coming to school to realise their goals, but did not appear to be sufficiently self-motivated to set high expectations and achieve for themselves. Some students felt that too much pressure was being placed on them to succeed academically and many may not have received academic support from their homes. Students complained:

> "There are too many assignments."
> "I do not only have to do schoolwork but my mother makes me do other duties as well.
> I cannot spend all my time studying."
> "This work is too hard."

Friendships among Students:

A small number of students were asked to talk about their friends both in and out of schools. The original intention of these questions was to assess whether friends help one another with school work and social support. Responses identified that friends interacted with each other for a number of reasons including: someone to talk to; someone to help me with homework; someone to share things with; and someone to whom I can tell my problems.

Interestingly, it did not matter whether these friends were male or female. There were no organised support groups for study as found elsewhere. A majority of the girls said that their friends were male! Female friends tended to come from South school. These friends were from across the attainment level. The anomalous finding of so many girls having male friends forced the researcher to pursue some further questions about single-sex and co-educational schools. Comments from the students were not supportive of their school or the choice that had been made that they attend a single-sex school:

> "If girls were educated with the boys, then they would get accustomed to them and, when they entered the world of work, working with them would not be strange."

One student stated that when she was at primary school there were boys. Now each time she looks around she sees girls, and she is not that happy with this situation. The call for co-education was a majority view among the girls interviewed. Only a small number of students still believed that their school should remain single-sex.

SUMMARY POINTS:

1. As a female-only school on an island where statistical evidence and social knowledge accepted that girls were attaining at higher levels than boys in school, the performance of girls in South School was at a lower level than would be expected. Teachers attributed low self-esteem as a primary factor to low school performance.

2. The profile of students attending the school showed many coming from a background of parents working in craft and unskilled occupations and many of the girls living with their mothers only.

3. The teaching and learning approaches used in the school were didactic; teachers controlled knowledge and the pace of learning. Communication and discussion rarely took place among the students, but was directed towards and channelled through the teachers.

4. There was little evidence of misbehaviour, although attendance was irregular among a number of students.

5. The 'culture' of the school appeared to support the students in a traditional, paternalistic way. There was little evidence of the encouragement or planning for the students' self-discipline or future development.

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5. St Vincent: Quantitative survey

BACKGROUND:

Previous chapters concerning Trinidad and Barbados showed that females performed better in school than males. In the Trinidadian example, consideration began with a survey (confirming the superiority of female performance) and provided evidence of within-class actions that supported the performance of females. In Barbados, the project confirmed speculation that females performed better in schools than males; yet anomalies due to paternal and maternal occupation and with whom the child lives were identified. Some of the anomalies were explored in depth through classroom observations in a prestige secondary school and in a female-only secondary school. Both Trinidad and Barbados are among the islands in the Caribbean whose provision of schools allows all children to attend at primary and secondary levels.

Discussions within the Caribbean acknowledged that universal primary and secondary education was not characteristic of all the islands. Speculation was made concerning the participation and performance of females in situations where there was limited access to secondary school places. A quantitative study was deemed necessary to investigate participation and attainment levels in an educational system that allowed for universal primary education but restricted entry (due to limited places) to secondary schools. This study would investigate:

1) whether there was a higher proportion of females than males in secondary schools;

2) whether there was consistent superior female performance in both primary and secondary schools on within-class and national measures of school attainment; and

3) whether restricted entry to secondary schools affected children's expected career and educational opportunities.

St Vincent was identified as a island which displayed the differences in primary and secondary school places for children. Upon discussion with the Ministry of Education (St Vincent and the Grenadines) we agreed that a representative study could be undertaken in primary and secondary schools which replicated the previous Barbados study.

Setting the scene:

Who participates in schooling in St Vincent?

The school system in St Vincent is financed by the government and provides local primary schools

throughout the island for all children. Entry to selective and stratified secondary schools is based upon levels attained on the Common Entrance Examination. While there are a number of secondary schools distributed around the island, the two high status schools (with established educational histories) are the male-only grammar and female-only high school. These schools are located in the main town, Kingstown.

The quantitative survey was undertaken with four specific age groups: Junior 2 (7 to 8 year olds), Junior 5 (11 to 12 year olds, the main primary school leaving group if the children had successfully passed their CEE), Form 2 (13 to 14 year olds) and Form 4 (16 to 17 year olds). Table 5.1 displays the island-wide distribution of males and females within these age groups (statistics taken from St Vincent and Grenadines, Ministry of Education, 1996).

Table 5.1: Island-wide distribution of males and females attending school within the age groups of the survey (percentage of sex type per age group in brackets)

AGE GROUP/ Sex	**Junior 2**	**Junior 5**	**Form 2**	**Form 4**
Male	1532(53.6)	1238(45.5)	754(41.8)	570(38.7)
Female	1328(46.4)	1481(54.5)	1050(58.2)	904(61.3)
Total	2860(100)	2719(100)	1804(100)	1474(100)

Total school enrolment for children in St Vincent and the Grenadines was 22149 in 1995/6, and there was a slightly greater number of males than females (11630 males and 10519 females) attending school in that year. Table 5.1 shows a proportional (and numerical) decline in school participation by both boys and girls. Based on this distribution, readers will see that there are fewer secondary school places for students, approximately 60% of the primary school cohort will gain entry to secondary school places. The decline within the secondary schools, though, was far more evident among males than females.

The Sample:

As with the Barbados quantitative survey, we wished the St Vincent sample to be representative, to provide information on the participation of girls and boys in schooling, to assess underlying reasons for within-class and national attainment and to question whether attainment was related to career and educational expectations of children. Because of the number and location of primary and secondary schools on the island, it was agreed with the Ministry of Education that the sample would be:

a. proportional with regard to educational district,

b. stratified with regard to ages of children (Junior 2, Junior 5, Form 2, and Form 4) and types of secondary schools (co-educational, single-sex),

c. focused to ensure a range of **CXC** performance of secondary schools, and

d. clustered to gain information from whole classes within the selected schools.

All of the schools in this survey were state-funded. (There are very few private schools in St Vincent (three primary schools and no secondary schools) and none were included in this sample.) Of the sixty state-funded primary schools in St Vincent, the survey drew upon twelve schools (20% of the total). Of the twenty-one secondary schools, the survey drew upon seven schools (33% of the total). Among the secondary schools focused upon, the top performing (by CXC Examination results) schools included the male-only, the female-only single-sex schools and a co-educational school. All other secondary schools were co-educational and presented a range of mid to low CXC performance. All of the primary schools were co-educational. Overall, data was recorded for 1379 children. There were 916 primary school pupils and 463 secondary students surveyed.

The survey profile of parental occupations from the St Vincent sample was slightly different from the reported Barbados sample, displaying a higher proportion of craft and elementary labouring work undertaken by fathers (Table 5.2) and by mothers (Table 5.3).

Table 5.2: Paternal occupations of St Vincent sample

Value Label	Frequency	Percent	Valid Percent	Cum Percent
top managers	17	1.2	1.5	1.5
professionals	44	3.2	3.9	5.4
tech assoc prof	98	7.1	8.8	14.2
clerks	20	1.5	1.8	16.0
service/sales	150	10.9	13.4	29.4
skilled agric/fish	15	1.1	1.3	30.7
crafts	274	19.9	24.5	55.2
machine operators	16	1.2	1.4	56.6
elementary	302	21.9	27.0	83.6
unemployed	40	2.9	3.6	87.1
vague	112	8.1	10.0	97.1
immigrant	17	1.2	1.5	98.7
deceased	13	. 9	1.2	99.8
student	2	.1	.2	100.0
no occupation identified	259	18.8	Missing	
Total	1379	100.0	100.0	

Table 5.3: Maternal occupations of the St Vincent sample

Value Label	Frequency	Percent	Valid Percent	Cum Percent

top managers	7	.5	.6	.6
professionals	95	6.9	7.5	8.0
tech assoc prof	23	1.7	1.8	9.9
clerks	85	6.2	6.7	16.5
service/sales	109	7.9	8.6	25.1
crafts	39	2.8	3.1	28.2
machine operators	7	.5	.6	28.8
elementary	488	35.4	38.5	67.2
unemployed	148	10.7	11.7	78.9
housewife	195	14.1	15.4	94.2
vague	48	3.5	3.8	98.0
immigrant	18	1.3	1.4	99.4
deceased	6	.4	.5	99.9
student	1	.1	.1	100.0
no occupation identified	110	8.0	Missing	
Total	1379	100.0	100.0	

Information provided by the survey:

1. Who is succeeding in school?

This first question explored whether the superior attainment performance of females within the St Vincent sample was the same as found in Barbados. The comparisons drew upon the raw end-of-term scores from each class, the standard deviated (standardised) within-class scores for all children, and the CEE scores for the secondary school students. Analyses were undertaken for the whole sample and at each year level. Within-class scores included an average of core curriculum scores and subject scores in English, mathematics, science and social studies.

Within-class attainment: Drawing upon the 'raw' scores assigned by the teachers on the end-of-term examinations, girls were found to attain higher percentage grades and perform at a higher standardised level overall (Table 5.4). While girls performed at a higher level than boys, their performance was not consistently higher in all curriculum areas (a finding distinct from Barbados and Trinidad). Girls' attainment excelled in English and social studies. Their attainment was not significantly higher than boys in mathematics or the sciences.

Table 5.4: Raw and standard deviated scores for core subjects and significance of differences between boys and girls.

Core Course	Average Male Score	Average Female Score	Difference based on Raw Score	Difference based on S.D. Score
Average	52.32	54.70	F1,1249= 7.454, p<0.0064	F1,1228= 5.983, p<0.015
English	50.39	55.06	F1,1234= 21.355, p<0.0001	F1,1213= 19.750, p<0.0001
Maths	49.64	49.20	N.S.	N.S.
Integrated Science	55.06	56.77	N.S.	N.S.
Social Studies	54.84	58.70	F1,1161= 13.225, p<0.0003	N.S.

When the within-class attainments were explored by year in school, even fewer differences were found between the performance of boys and girls. There were no significant differences in attainment between boys and girls in any of the core curriculum subjects at the Junior 2 level. At Junior 5, girls attained higher raw scores in English, mathematics and social studies, although the standardised score only confirmed this result in English. At second form, boys attained higher raw scores in mathematics but this was not confirmed using the standardised scores and girls scored higher on the standardised scores in English. At fourth form, girls scored significantly higher in English, social studies and biology but the standardised scores only confirmed this result in English. The disparity between raw and standardised results is important; raw scores tell that girls were assigned higher scores than boys but within the classes the standardised scores did not show as many differences in performance between males and females as were found elsewhere in the Caribbean.

Differences between boys and girls were also explored with regard to the type of school attended. In these analyses, the average and English scores were used for comparison. Differences showed that girls attained higher within-class and standardised scores in primary schools (all of these schools were co-educational) and these differences were also found in the mid-attaining co-educational secondary schools. Differences between the attainments of boys and girls were not found among the low attaining and high attaining secondary schools (Table 5.5).

Table 5.5: Raw and standardised score performance of boys and girls by type of school attended (for co-educational schools only), drawing upon average scores and scores in English

Type of school	Average Male Score	Average Female Score	Difference based on Raw Score	Difference based on S.D. Score
Primary Average	51.13	35.27	F1,797=3.295, p<0.069	N.S.
English	49.61	54.06	F1,788=10.796' p<0.0011	F1,788=9.239/ p<0.0024
Secondary (low att)				
Average	53.12	53.45	N.S.	N.S.
English	51.77	56.99	N.S.	N.S.

Secondary (mid att)				
Average	49.48	54.39	F1,149=6.159, p<0.014	F1,144=15.092/ p<0.0001
English	41.28	49.21	F1,144=15.092, p<0.0002	F1,144=18.382, P<0.0001
Secondary (high att)				
Average	51.08	50.97	N.S.	N.S.
English	48.00	52.59	N.S.	N.S.

CEE, a national comparison

Descriptive statistics indicate that girls were likely to attain at higher levels than boys at both primary and secondary school levels generally. The CEE scores taken at the end of the primary school present a very different picture. These scores were collected for all second and fourth form children in the sample. The scores represent only those who were successful on the examination and gained one of the limited number of places in secondary schools. There was virtually no difference in the average CEE scores for boys and girls; average for boys was 171.63 and average for girls was 171.66. While the scores for the boys and girls were nearly the same, the number of children that completed the CEE by sex tells a different story. Data for males was collected from 107 boys and data was collected from 253 females. Two points can be made from this data: first, students who successfully completed the CEE gained near-equivalent scores although there were nearly 2.5 females who were successful for every male; and second, although starting secondary schools with nearly equal CEE scores, girls were still more successful within their classes - especially in English.

2. What was the distribution of male and female pupils in each of the year levels: was there evidence of male drop-out or were girls restricted entry to secondary schools?

Overall, there were more girls than boys attending school in the sample and at each age level (Table 5.6). Within the primary schools there were slightly more girls than boys at each of the year levels. Within the secondary schools there was a dramatic drop off in the number of boys attending at the second and fourth forms. The drop off in male presence at secondary schools mirrored the national statistics. The drop off also shows that selective entry to secondary education was not dominated by equality (in number of boys and girls attending), nor was it dominated by males usurping secondary school places that characterise other developing countries (Brock & Cammish, 1997).

Table 5.6: Total number of males and females in the sample and distribution at each year level surveyed (percentage by year group in brackets)

SEX	**YEAR IN SCHOOL**				**Row Total**
	Junior 2	**Junior 5**	**Form 2**	**Form 4**	
male	154	262	80	71	567
	(44.9)	(45.9)	(33.6)	(31.6)	(41.2)
female	189	309	158	154	810

	(55.1)	(54.1)	(66.4)	(68.4)	(58.8)
Column	343	571.	238	225	1377
Total	(25.3)	(42.1)	(17.6)	(16.3)	(100.0)

Focusing on boys only, we questioned whether consideration of parental occupation helps to provide an explanation for the dramatic drop-off of male participation at secondary school. Tables 5.7 and 5.8 display that most of the drop-off took place among boys whose parents worked in crafts and unskilled occupations. Boys whose parents worked in skilled and professional/managerial occupations were more likely to stay-on in secondary school.

Table 5.7: (Grouped) Paternal occupations of boys in school by year level excluding incomplete figures from form 4 (row and column percentages in brackets)

FATHER OCC.	**EAR IN SCHOOL**			**Row Total**
	Junior 2	**Junior 5**	**Form 2**	
craft/elem/unemp	81	146	29	256
	(31.6)	(57.0)	(11.3)	(69.2)
	(68.6)	(73.7)	(53.7)	
clerk/service/sk	16	26	15	57
	(28.1)	(45.6)	(26.3)	(15.4)
	(13.6)	(13.1)	(27.8)	
professional/man	21	26	10	57
	(36.8)	(45.6)	(17.5)	(15.4)
	(17.8)	(13.1)	(18.5)	
Column	118	198	54	370
Total	(31.9)	(53.5)	(14.6)	(100.0)

Table 5.8: (Grouped) Maternal occupations of boys in school by year level excluding incomplete figures from Form 4 (row and column percentages in brackets)

MOTHER OCC.	**YEAR IN SCHOOL**			**Row Total**
	Junior 2	**Junior 5**	**Form 2**	
manager/prof	13	22	16	51
	(25.5)	(43.1)	(31.4)	(11.9)
	(10.5)	(9.3)	(23.5)	
clerk/service	12	31	21	64

	(18.8)	(48.4)	(32.8)	(15.0)
	(9.7)	(13.1)	(30.9)	
craft/unskilled/	83	154	15	252
	(32.9)	(61.1)	(6.0)	(58.9)
	(66.9)	(65.3)	(22.1)	
housewife	16	29	16	61
	(26.2)	(47.5)	(26.2)	(14.3)
	(12.9)	(12.3)	(23.5)	
Column	124	236	68	428
Total	(29.0)	(55.1)	(15.9)	(100.0)

3. ***What other explanations can be provided for school-based success and failure?***

3. ***What other explanations can be provided for school-based success and failure?***

Within-class and CEE results and parental occupation: The Barbados survey showed that there were significant differences in attainment due to parental occupation, especially that of the mother, and that these differences accounted for more of the variance in attainment scores than the sex of the child. A

similar set of analyses were undertaken on the St Vincent data. For this analysis, the occupations of the father were broken down into three groupings: professional/managerial, clerk/skilled, and craft/unskilled. The occupations of the mother were broken down into four groupings: professional/managerial, clerk/skilled, craft/unskilled, and housewife. Using the raw within-class attainment scores in each of the core curriculum subjects and CEE many significant differences were found with regard to the occupations of father and mother. The higher the occupational level (and educational background) of the father, the higher the average and core curriculum and CEE scores for the child. This statement is made with regard to averaged grades in each subject and most of the curriculum subjects at each age level (Table 5.9) and is replicated using the standardised attainment scores. Focusing on the magnitude of differences between the different year levels in school, readers will note that differences between children of professional and craft background at secondary schools were not as wide as found in the primary school years. While there were significant differences between children from different paternal backgrounds in the secondary schools, the selection to gain entry into secondary school obviously withdrew a number of the (potentially) lower attaining children from the sample. Analyses for occupation of the mother paralleled those of the father; this was not surprising as there was a significant correlation between occupations of parents (rho= 0.358, $p<0.0001$). A more focused view of Table 5.10 shows that the general relationship between maternal occupation and within-class results did not remain the same at all year levels; the relationship between maternal occupation and subject attainment virtually disappeared at the second and fourth forms (Table 5.10). A possible explanation for the non-significant differences in within-class attainments explained by maternal occupation may be the gradual drop-off in school participation of children from the craft and unskilled parental occupations. The remaining children in school will be supported by a more educated and skilled home background, as well as being the children who have succeeded in their earlier years of schooling.

Table 5.9: Within-class attainment averaged by (grouped) paternal occupation

SUBJECT/ Yr.Level	AVERAGE	ENGLISH	MATHS	SCIENCE	SOC.ST.
Overall					
prof..	61.90	61.87	58.94	62.76	64.78
clerk..	54.92	54.65	50.01	56.78	58.69
craft..	52.13	51.27	48.21	54.52	55.09
Signif.	F2,885=24.319, p<0.0001	F2,877=21.691, p<0.0001	F2,878=18.473, p<0.0001	F2,813=10.616, p<0.0001	F2,823=16.852, p<0.0001
Junior 2					
prof..	70.77	73.63	67.33	73.52	68.59
clerk..	59.15	59.82	54.39	64.03	58.17
craft..	60.48	60.95	55.85	63.38	61.47
Signif.	F2,190=5.363, p<0.0054	F2,189-5.885, p<0.0033	F2,190=4.060, p<0.0188	F2,188-3.595, p<0.0294	N.S.
Junior 5					
prof..	57.22	56.02	57.21	57.09	59.75
clerk..	49.01	50.35	44.39	51.22	51.63
craft..	46.76	45.72	44.09	49.14	48.90
Signif.	F2,404=10.909, p<0.0001	F2,399=8.795, p<0.0002	F2,404=13.314, p<0.0001	F2,388=4.351, p<0.0135	F2,382=8.428, p<0.0003
Form 2					
prof..	65.90	65.67	59.71	67.16	71.10
clerk..	62.08	58.67	60.49	60.19	69.77
craft..	58.44	56.61	55.18	58.91	62.65
Signif.	F2,144=5.585, p<0.0046	F2,143=4.127, p<0.0181	N.S.	F2,143=3.551, p<0.0312	F2,128=4.149, p<0.0179
Form 4					
prof..	58.62	58.00	53.97	56.06	64.38
clerk..	53.59	52.07	43.18	55.25	63.61
craft..	51.70	50.41	43.54	54.26	59.32
Signif.	F2.138=5.265, p<0.0063	F2,137=5.259, p<0.0063	F2,131=4.694, p<0.0107	N.S.	F2,117=3.501, p<0.0334
Average CEE scores					

prof..	186.45	N.A.	N.A.	N.A.	N.A.
clerk..	173.44				
craft..	166.35				
Signif.	F2,236=6.237, p<0.0023				

Table 5.10: Within-class attainment averaged by (grouped) maternal occupation

SUBJECT/ Yr.Level	**AVERAGE**	**ENGLISH**	**MATHS**	**SCIENCE**	**SOC.ST.**
Overall					
prof..	60.58	60.26	56.31	63.60	64.33
clerk..	56.50	54.98	52.46	57.27	61.88
craft..	51.64	51.16	46.96	55.00	54.84
h/wife	54.09	52.62	50.44	55.09	57.66
Signif.	F3,1083=14.3290, p<0.0001	F3,1072=9.905, p<0.0001	F3,1075=9.925, p<0.0001	F3,979=7.108, p<0.0001	F3,1016=13.201, p<0.0001
Junior 2					
prof..	73.24	73.16	69.95	76.42	73.42
clerk..	66.40	63.95	63.95	67.09	70.62
craft..	59.99	61.12	54.57	63.74	60.45
h/wife	53.89	52.12	47.68	61.08	54.50
Signif.	F3,206=6.868, p<0.0003	F3,205=4.596, p<0.0039	F3,206=5.470, p<0.0012	F3,205=3.345, p<0.0199	F3,203=6.195, p<0.0005
Junior 5					
prof..	58.21	57.92	55.47	60.13	59.95
clerk..	50.12	48.18	47.88	52.56	52.11
craft..	46.20	45.60	43.08	49.38	48.19
h/wife	51.85	51.16	49.97	51.23	55.31
Signif.	F3,495=9.317, p<0.0001	F3,488=7.099, p<0.0001	F3,495=8.261. p<0.0001	F3,477=4.386, p<0.0046	F3,469=7.359, p<0.0001
Form 2					
prof..	61.27	60.79	56.07	62.41	65.68
clerk..	61.12	59.45	56.31	59.53	70.02
craft..	59.92	58.52	55.11	60.94	66.15

h/wife	56.65	53.76	54.63	58.07	61.19
Signif.	N.S.	N.S.	N.S.	N.S.	N.S.
Form 4					
prof..	55.25	54.91	49.44	59.06	62.39
clerk..	54.09	54.10	46.63	54.74	61.89
craft..	51.57	49.20	41.92	56.83	61.14
h/wife	56.02	54.82	48.23	56.00	61.25
Signif.	N.S.	F3,177=3.337, p<0.0207	N.S.	N.S.	N.S.
Average CEE scores					
prof..	182.44	N.A.	N.A.	N.A.	N.A.
clerk..	179.33				
craft..	162.31				
h/wife	171.79				
Signif.	F3,296=6.249, p<0.0004				

Parental occupation by type of school attended: Occupation of parents was an important factor in the explanation of the presence of particular children in stratified types of secondary schools in both Trinidad and Barbados, and a similar expectation was held for St Vincent. Analyses focused solely on secondary schools, as this is where stratification within the school system occurs. Tables 5.11 and 5.12 clearly show that children whose fathers and mothers were employed in managerial or professional positions were most likely to attend the top attaining schools in the sample. The difference in distribution between children from various parental occupations within secondary school types was not significant for paternal occupation but was highly significant for maternal occupation (X^2 (6)=19.242, p<0.004). Table 5.11 shows a higher proportion of children from a professional/managerial background attended the high attainment secondary schools.

Table 5.11: Distribution of students in types of secondary school by grouped paternal occupation (percentage of occupation by school types in brackets)

SEC. SCHOOL TYPE	**FATHER'S OCCUPATION**			**Row Total**
	prof/ man	**clerk/ skill**	**craft/ unskill**	
sec.-low att	8	12	39	59
	(12.1)	(18.8)	(23.5)	(19.9)
sec.-mid att	15	23	51	89
	(22.7)	(35.4)	(30.7)	(30.1)
sec.-high att	43	29	76	148

	(65.2)	(45.3)	(45.8)	(50.0)
Column	66	64	166	296
Total	(22.3)	(21.6)	(56.1)	(100.0)

Table 5.12: Distribution of students in types of secondary school by grouped maternal occupation (percentage of occupation by school types in brackets)

SEC. SCHOOL TYPE	**MATHER'S OCCUPATION**				**Row Total**
	prof/ man	**clerk/ skill**	**craft/ unskill**	**house-wife**	
sec.-low att	10	17	50	16	93
	(15.5)	(18.9)	(32.9)	(19.5)	(24.0)
sec.-mid att	16	29	54	26	125
	(25.4)	(32.2)	(35.5)	(31.7)	(32.3)
sec.-high att	37	44	48	40	169
	(58.7)	(48.9)	(31.6)	(48.8)	(43.7)
Column	63	90	152	82	387
Total	(16.3)	(23.3)	(39.3)	(21.9)	100.0)

Raw scores and CEE scores by type of secondary school: The difference in social background of those attending the various types of secondary schools is shown in a slightly different way when considering whether the different types of secondary school provide differential feedback to their students. Table 5.13 clearly displays that the higher attaining schools awarded the highest within-class scores to their students. Also, the students in the top attaining schools scored higher on their CEE examinations. This finding shows a significant differentiation on the part of schools and teachers. Within-class scores were assigned by each teacher, based on the work that the class covered in each subject over the term. Theoretically, each type of school could and should provide the same range and average scores for its students. The table clearly shows that the high attaining school provided the highest scores for students (Scheffe post hoc analysis) and there was little differentiation between the mid and low attaining schools.

Table 5.13: Average end-of-term, core curriculum subject and CEE scores for types of secondary school

Type of school	**Average score**	**English**	**Maths**	**Science**	**Social Studies**	**CEE**
High Att	61.03	61.83	55.08	62.02	66.88	191.16
Mid Att	52.54	46.27	51.07	50.52	63.56	158.73

Low Att	53.36	55.59	39.67	60.85	59.59	160.04
Diff.	F2,449=29.232, p<0.0001	F2,443=63.587, p<0.0001	F2,438=23.339, p<0.0001	F2,351=22.493, p<0.0001	F2,393=8.875, p<0.0002	F2,339=62.356, p<0.0001

Even within the top attaining secondary schools, there was a significant difference between the three schools that made-up this grouping. The three schools included the high status male-only grammar school, the high status female-only school and a co-educational school. CEE scores show that girls attending the female-only school attained the highest scores, followed by the male-only and co-educational schools. The school giving the highest within-class scores to students was the female-only school. These scores were closely followed by the male-only school. Both of the single-sex schools gave higher scores to their students than the co-educational school (Table 5.14).

Table 5.14: Average end-of-term, core curriculum subject and CEE scores for high attaining secondary schools

Type of school	**Average score**	**English**	**Maths**	**Science**	**Social Studies**	**CEE**
Male	62.84	63.93	62.33	61.68	72.50	190.49
Female	67.25	67.42	62,33	71.91	73.46	213.63
Co-ed.	50.98	52.35	38.42	52.09	56.22	159.19
Diff.	F2,185=56.891, p<0.0001	F2,185=35.929, p<0.0001	F2,185=61.304, p<0.0001	F2,156=37.981, p<0.0001	F2,73=21.155, p<0.0001	F2,163=95.294, p<0.0001

While students attending the female-only school were assigned the highest average within-class scores of the top attaining schools, we questioned whether girls in the top attaining co-educational school attained higher than boys in that school. Before this analysis was undertaken, it was noted that there were very few males in the co-educational school, girls outnumbered the boys by a ratio of ten to one. A review of the raw and standardised scores showed that there were no significant differences in the attainments of boys and girls in this school.

Pre-school attendance: Attendance of pre-school contributed a significant amount of the variance in the within-class scores for secondary students in Barbados and similar analyses were undertaken on the St Vincent data. The survey data showed that a very high proportion of children stated that they had attended pre-school; nearly 65% said that they had attended a pre-school. Overall, if children attended a pre-school before starting primary school, they were more likely to attain higher within-class scores (calculated on the raw data, $F_{1,1212}= 13.675$, $p<0.0001$; and on the standardised scores $F_{1,1212}= 4.604$, $p<0.0321$). Similar findings were shown in the three main curriculum subjects of English, mathematics and science, but significant differences were not found for social studies. The analyses were undertaken separately at primary school and secondary school levels. Findings showed significant differences for primary schools (raw scores: $F_{1,784}= 18.054$, $p<0.0001$; standardised: $F_{1,784}= 4.834$, $p<0.028$), but there were no significant differences

found within the secondary school population (although the numerical averages for pre-school attenders was higher than non-attenders). The higher raw and standardised within-class scores for pre-school attenders may be explained by the greater likelihood that those children who attended pre-school came from a privileged home background; parents who worked in professional or managerial occupations were more likely to send their children to pre-school than other parental occupations (father X^2 (2)=8.011, $p<0.018$; mother X^2 (3)=15.480, $p<0.0015$). There was no difference in pre-school attendance between boys and girls in the sample.

With whom does the child live? A child's success in school in Barbados was partially determined by parental background and this was seen to affect type of school attended. A further home-based contribution to educational success was with whom the child lived. In St Vincent, most children lived with the mother or mother and father (Table 5.15). These results provided a comparable percentage of children who lived with the mother only and father only but a smaller proportion of the sample lived with both parents and a larger proportion lived with grandparents(see Table 4.1.21).

Table 5.15: With whom does the child live?

	Frequency	**Percent**
mother only	523	37.9
father only	51	3.7
both parents	513	37.2
grandparents	148	10.7
other relatives	83	6.0
guardian	40	2.9
(missing)	21	1.5
Total	1339	100.0

In Barbados, children who lived with both parents attained at higher levels within-class and nationally. A similar result was found among the St Vincent sample (Table 5.16). Children who lived with both parents attained higher within-class scores and this was substantiated using standardised scores. These findings were consistent for all children and among separate analyses for boys and girls. The children who attained, on average, the lowest in schools were those who lived with the mother only. When focusing on the CEE scores, a different picture is presented. There were no significant differences between the scores when compared to the different 'living with' situations. There are some indications that boys living with grandparents and girls living with both parents did better than others on the CEE. Readers should remember that CEE scores represent an elite group of children who passed their primary school leaving examination, thus this was a much smaller sample than found in the whole survey.

Table 5.16: Averages and differences on within-class and national scores for children living with mother, father, both parents and grandparents

CHILDREN/ Scores	ALL CHILDREN	MALES ONLY	FEMALES ONLY
Common Entrance Live with:			
mother	171.39	172.61	170.88
father	152.40	158.33	149.86
both	173.19	164.83	176.14
grandparent	169.33	178.83	166.62
Significance	N.S.	N.S.	N.S.
Standardised Live with:			
mother	-0.1381	-0.2284	-0.0794
father	-0.0117	0.0102	-0.0379
both	0.1314	0.0279	0.2086
grandparent	-0.0351	-0.2351	0.1070
Significance	F3,1107= 5.854, p<0.0006	F3,452= 2.644, p<0.048	F3,650= 4.009, p<0.0076
Raw Average Live with:			
mother	52.29	50.99	53.19
father	52.31	50.98	53.98
both	55.60	53.98	56.84
grandparent	52.89	50.95	54.39
Significance	F3,1128= 4.042, p<0.0072	N.S.	F3,650= 2.975, p<0.0311

A review of the relationship between parental occupations and with whom the child lives showed that there was no significant difference between the range of paternal occupations and with whom the child lives. For maternal occupation, though, there was a significant difference (X^2 (9)= 45.618, p<0.0001), showing that maternal occupation when living with both parents was most likely to be managerial/professional or housewife. Other 'living with' situations showed lower proportions of these occupations for mothers.

Who helps with homework? Simply identifying with whom the child lives does not tell about the help that a child receives with school work. Children were asked whether anyone helps them with homework. Most children stated that they received help with their homework (81.4%). Children were more likely to receive help with homework when they attended primary school than secondary school (approximately 90% received help in primary school while 65% received help at secondary). There were no parental occupation differences between those children who received help or not. Table 5.17 reveals that mothers, sisters and brothers were most likely to help with homework within the family; fathers only helped twenty-one percent of their children. Within the table, we were able to explore whether males or females worked with friends on their homework, and found that sixty-two percent of those who received help from a friend were female. Using tutors to help with homework may appear, logically, to be the prerogative of children of professionals and managers. In this sample, though, the largest proportion of children who received help from a tutor (approximately 63%) came from a craft and unskilled home background.

Table 5.17: Who helps the child with homework

Who helps with homework	Percentage receiving help
Mother	48.6%
Friend	36.2%
Relatives	33.9%
Sister	32.5%
Brother	22.7%
Father	21.3%
Tutor	15.4%

Dividing children's within-class attainment into three groups of high, middle and low attainers and comparing this grouping to help with homework revealed that there were no differences between those who received homework help from mothers, brothers, sisters, relatives or friends. High attainers were more likely to receive help from their father than other groups. Low attainers were more likely to receive help from a tutor than other groups.

Attitudes to future education and occupation: The Ministry of Education in St Vincent requested that the children surveyed be asked to respond to three questions about the role of education in their lives. Children were asked what occupation they aspired to, whether and why education was important and to what level they expected to rise in education. Descriptively, children answering these questions showed extremely high expectations for future occupation and education. Table 5.18 displays that two-thirds of children thought that they would, eventually, rise to a professional or managerial occupation. Table 5.18 contrasts sharply with the actual parental occupations of the sample (Tables 5.2 and 5.3) which displays only 13% of parents in these professional positions.

Table 5.18: Occupational expectations of children in the sample

Value Label	Frequency	Percent	Valid Percent	Cum Percent
top managers	18	1.3	1.4	1.4
professionals	602	44.3	46.3	47.7
tech assoc prof	249	18.3	19.2	66.8
clerks	118	8.7	9.1	75.9
service/sales	79	5.8	6.1	82.0
skilled agric/fish	3	.2	.2	82.2
crafts	123	9.1	9.5	91.7
machine operators	1	.1	.1	91.8

elementary	11	.8	.8	92.6
unemployed	1	.1	.1	92.7
vague	95	7.0	7.3	100.0
	58	4.3	Missing	
Total	1358	100.0	100.0	

In a similar manner, many children displayed high expectations for their educational careers (Table 5.19). Nearly sixty percent of children stated that they expected to go to university and a further fourteen percent expected to attend technical college.

Table 5.19: Educational expectations of the sample children

Value Label	Frequency	Percent	Valid Percent	Cum Percent
primary	55	4.1	4.1	4.1
form 3	16	1.2	1.2	5.3
CXC	54	4.0	4.0	9.3
form 6	93	6.8	6.9	16.2
university	796	58.6	59.2	75.4
tech college	190	14.0	14.1	89.5
evening class	141	10.4	10.5	100.0
	12	.9	Missing	
Total	1358	100.0	100.0	

In a sense, the occupational and educational expectations appear unrealistic - the thoughts of those who have not yet entered the real and competitive world of higher education and jobs. In another sense, the children were very focused on the importance of education. When asked if education was very important, unimportant or if they were unsure, ninety-eight percent stated that education was very important and only half-a-percent stated that it was unimportant. When asked why education was important, over two-thirds of the children stated that it was for the development of knowledge and skills; another thirty percent stated that education would help to gain a job and less than ten percent identified social aspects of education (developing and seeing friends) as important.

The unusually high job and educational expectation could have been accounted for by young children's unrealistic images of their futures. When Tables 5.18 and 5.19 were broken down into primary and secondary school levels, very few differences were found between children at these levels. Children whose mothers or fathers worked in professional and managerial positions tended to identify these positions for their future employment. Children whose parents worked as clerks, skilled or service positions showed job expectations that ranged from professional through sales and service positions. A large majority of the children whose parents worked in craft and unskilled positions (nearly two-thirds of the children) expected to work in

managerial and professional positions, and this finding characterised children at both primary and secondary school. A similar profile of educational expectation was found among primary and secondary school children. Many of the children expected to go to university, and this included over 55% of the children from craft and unskilled parental background.

When comparing job and educational expectations between boys and girls, significant differences were found between the sexes on each question. Girls showed a slightly higher expectation for professional and managerial positions and a higher expectation for clerk and service positions (Table 5.20) while more boys saw future positions in crafts and elementary labouring positions (X^2 (2)= 95.102, p<0.0001). Table 5.21 displays that girls also had a slightly different and higher expectation for then-education (X^2 (6)= 18.406, p<0.005). The educational aspirations of boys and girls appear very similar

except for those who expected to leave school before CXC examinations and those who aspired to university. Boys were more likely to see themselves as leaving school before CXC examinations and a greater proportion of girls aspired to university than boys.

Table 5.20: Male and female job expectation (grouped occupations) with percentages of occupation by sex in brackets

SEX	**EXPECTED OCCUPATION**			**Row Total**
	man./ prof.	**clerk/ service**	**craft/ elemen.**	
male	326	42	99	467
	(69.8)	(9.0)	(21.2)	(38.8)
female	543	158	36	737
	(73.7)	(21.4)	(4.9)	(61.2)
Column	869	200	135	1204
Total	(72.2)	(16.6)	(11.2)	(100.0)

Table 5.21: Male and female educational aspirations (percentages of educational aspiration by sex in brackets)

SEX	**EDUCATIONAL ASPIRATION**					**Row Total**
	primary	**form 3**	**CXC**	**form 6**	**university**	
male	32	8	30	38	295	542
	(5.9)	(1.5)	(5.5)	(7.0)	(54.4)	(40.3)
female	22	6	25	56	502	803
	(2.7)	(.7)	(3.1)	(7.0)	(62.5)	(59.7)
Column	54	14	55	94	797	

Total	(4.0)	(1.0)	(4.1)	(7.0)	(59.3)	

	tech college	evening class	Row Total
1	81	58	542
male	(14.9)	(10.7)	(40.3)
2	109	83	803
female	(13.6)	(10.3)	(59.7)
Column	190	141	1345
Total	(14.1)	(10.5)	(100.0)

4. From the range of significant results provided thusfar, what is the relative contribution of each result to the overall performance of pupils and students in school? Throughout these analyses a number of significant results have been presented to explain the performance of children within-class and on the national CEE. Significant results showed that girls attain at higher levels than boys, that children whose parents worked in managerial and professional positions attain at higher levels than others, pre-school attendance was associated with higher attainment, status of secondary school attended affects attainment, whether or not the child lived with both parents and if the father helped with homework also affect attainment. Stepwise regressions were undertaken to ascertain the amount and significance of each of these variables in explaining average end-of-term results, standardised end-of-term results and CEE scores. These results are conducted separately for primary and secondary school children.

Primary schools: Working with the standardised within-class scores, the regressions provided little information of significance. In total, about six percent of the variance was accounted for and this percentage was composed of two factors: occupation of the father (3.4% adjusted R square) and whether the child lived with both parents (a further 2.4% adjusted R square). Using the raw, non-standardised, within-class scores only 2% of the variance was accounted for and occupation of the mother contributed this amount. The most obvious conclusion is that success in primary school was not accounted for by the sex of the child, but was most likely to be affected by the occupation (and educational background) of the child's parents.

Secondary schools: Remembering that entry to secondary school was limited to only sixty percent of the primary school population, we expected that regressions may be very different from those found in Trinidad (Jules & Kutnick, 1990) and Barbados (Chapter 4.1). Stepwise regression on the raw within-class scores showed that six percent of the variance was accounted for by two factors; the occupation of the father (3.7% adjusted R square) and whether the father helped with homework (a further 2.4% adjusted R square). Using the standardised within-class scores, a smaller amount of variance was explained: help with homework by the father (2.3% adjusted R square) and sex of the student (a further 1.4% adjusted R square). Similar analyses were undertaken that drew upon co-educational schools only; this analysis excluded the two (single-sex) top prestige schools from the sample. Co-educational results mirrored the standardised variance, but the variance of the raw scores showed that father helping with homework accounted for 1.2% (adjusted R square), sex of the student accounted for another 1.1% (adjusted R square) and school type accounted for another 1.0% (adjusted R square). Focusing on the CEE scores, it must be remembered that only those children who were allocated a secondary school place provided a score - this in itself established these children as an elite group.

The only significant contribution to the CEE variance was type of secondary school attended, and this contributed a large 29.3% (adjusted R square) of the variance. In surveying the range of regression results for secondary schools, a picture of the successful child shows one who is placed in the high attaining secondary schools, who receives help from father and is female.

SUMMARY POINTS:

1. The survey confirmed the drop-off in student numbers between primary and secondary schools that would be expected in St Vincent, but showed that the drop-off was more dramatic among males than females. Economic constraints, such as those found in Sub-Saharan Africa, did not preclude females from participating in education through secondary schooling and having high educational ambitions.

2. Girls generally performed at higher attainment levels throughout the survey, although the differences between their attainments and male attainments were not as dramatic as those reported from the Barbados survey.

3. Attainment results were highly stratified by parental (both paternal and maternal) occupation, attendance of pre-school and type of secondary school attended; this was seen most clearly in the secondary school regression.

4. Children who lived with both mother and father were most likely to attain at the highest levels. High attainers were most likely to receive help with school work from their fathers. Alternately, we can speculate about the existence of a vicious circle of failure among males. Males are most likely to drop-out of school, and often attained at low levels. These males did not have the support of living with both parents and low attainers are unlikely to receive help with school work from fathers. School disaffection and drop-out is likely to be repeated within the families of these males who are unable to achieve the high occupational positions and educational support correlated with educational success for their children.

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6. Summary of the studies

The studies reported in this occasional paper were undertaken to add to our knowledge and understanding of the relationship between gender and school achievement within the context of developing countries. The Caribbean region was selected for the project because great efforts have been made to improve the quantity and quality of education in many of these countries. Also, preliminary studies concerning educational achievement in one of these developing countries showed that females were succeeding at much higher levels than males. This achievement by females contrasted sharply with results of studies undertaken in other developing countries.

The three countries selected for study were: Trinidad, Barbados and St Vincent. These countries were selected:

1. to expand the preliminary survey research previously undertaken in Trinidad by establishing qualitative insights into school processes that support success;

2. to question the generalisability of findings to other countries (from Trinidad to Barbados and St Vincent) with similar and dissimilar patterns of enrolment in schools; and

3. to seek descriptive evidence concerning background and other factors of those succeeding and those likely to drop-out of the school system.

The methods chosen for the studies included: quantitative surveys to assess success and generalisability of results from one island to another; and qualitative case studies to provide insights into classroom process, interaction and structure in the promotion of success (or lack of it) at the level where it affects children.

Four research questions that underlie the studies are revisited. This chapter provides brief summaries of evidence and some implications from the range of studies presented in the earlier chapters.

1. What is the evidence for variance of school achievement scores between males

and females, especially between pupils of equal ability? Evidence drawn upon includes within-class tests in curriculum subjects and national Common Entrance Examination (CEE) scores taken when children near the end of their primary schooling.

a. In the Barbados survey, girls scored higher in each of the core curriculum subjects of English, mathematics and science as well as in social studies and on the Common Entrance Examination.

b. In the top year of primary schools in Barbados, boys were more likely to be found in the lower streams and girls in the higher streams within their schools.

c. In the classroom observations in Trinidad, teachers, schools and classrooms played a major role in the development of children's attainment. Selection to secondary school, based on CEE results, showed virtually no differences between the scores of males and females. Within-class attainment differences between boys and girls were highly significant: the success of girls is most likely to be attributed to the encounters of schooling and the attitudes that students develop towards schooling.

d. Additionally, the Trinidad observations showed that it is naive to assume that it is just boys who present learning and behaviour problems in the classroom. These observations showed that both boys and girls had low attainment levels and needed to be supported to improve their achievement in education.

e. In the St Vincent survey, girls generally performed at higher attainment levels in the core curriculum subjects and on the CEE although the differences between their attainments and male attainments were not as dramatic as those reported from the Barbados survey.

2. While girls are seen to achieve at higher levels than boys, do these differential levels of achievement remain over time (especially over the years of secondary schooling)? Are there differences in subject (option) choice between boys and girls? And, is this difference in performance related to earlier individual expression of ability or socialisation?

a. The Barbados survey found that, within the core curriculum subjects, girls performed better than boys on average throughout the years of secondary schooling. After selection into secondary schools, some of the

sex differences became less dramatic, especially in mathematics, chemistry and physics (subjects normally taken in the prestige schools). Boys performed better than girls in industrial arts, but girls performed better than boys in modem languages and business studies.

b. Occupations of mothers and fathers were significantly associated with school success, as well as whether the child lived with both parents and if father helped with homework. Matrilineal explanations that dominate some Caribbean explanations for school success were not found to be significant here. Each of the significant background or socialisation factors showed that children (male and female) performed better in schools if their parents worked in professional and managerial positions (which required advanced education). Occupation of parents provided a more significant explanation for school success than the sex of the child.

c. In Barbados, participation at various levels of the stratified school system also affected school success. Pre-school attendance and attendance of high status (prestige) secondary schools were significantly associated with enhanced school attainments, although both of these factors were significantly associated with parental occupation. If a boy or girl was able to achieve entry to a high status school, characteristic sex and social class differences in attainment were no longer found. Prestige schools encouraged a democratic performance among those who had achieved at the top levels of the CEE. A similar range of results characterised the St Vincent survey.

d. We wish to raise a concern that the father's lack of presence, poor education and lack of help with homework may be cyclical in the educational experience of boys. Over the years of secondary schooling in Barbados and St Vincent, boys participated less. Overall, there was a drop-off in participation rate in Barbados from 50% in the primary school to 36% at the sixth form and in St Vincent from 53% in the primary school to 38% in the fourth form. Drop-off among the boys was most dramatic among those from a working class background.

e. By the fourth form students chose course options. The Barbados survey showed there were significantly more girls than boys pursuing core curriculum studies, all three sciences, modem languages, business studies and fine arts; many of these options have not been described as typical of course choices made by females previously.

f. Part of the explanation for remaining in school and high attainment

may be the 'culture' generated within particular schools. In the case study of a prestige school in Barbados, children were aware that high levels of attainment would be rewarded with high examination passes and scholarships. Within this culture of high attainment, all students appeared to be self-disciplined and participated fully in school and homework. In the female-only school in Barbados, girls attained at lower levels than expected. Teachers attributed low self-esteem as a primary factor in low school performance, but cultural aspects such as teacher paternalism and poor support for education at home may be equally strong explanations.

3. As higher levels of attainment were found among girls, do girls display any learning strategies which are distinct from boys (which may serve as models of successful approaches to attainment in schooling)? Also, were there any teaching and learning strategies characterised in schools and classrooms that either enhance or deny the learning potential of children (especially boys)?

Child-based strategies:

a. Observations showed that the formal interaction between teacher and child, exemplified in question and answer sessions, placed a great burden on the child to 'get it right'. At the same time, some children were allowed to "hide' from participation. A competitive atmosphere generated within question and answer sessions and frequent quizzes encouraged the high attainers and discouraged the low attainers. Reliance on the individual child as the source of participation in the classroom can be augmented by paired work and peer tutoring. Paired preparation may relieve pupils of some of the threat generated in question and answer sessions. Boys, in particular, may benefit from paired work; when they were unable to answer questions in the didactic classroom they were provided with little support from their classmates. When girls needed help in question and answer sessions, they often received help from female classmates either verbally or non-verbally.

b. Children can and will participate in learning and generation of classroom rules if they are given the opportunity to participate. Teachers may consider how they can be more inclusive of children's ideas and contributions.

c. Lowest attaining children (mainly boys) displayed poor social skills. Social skills are at the centre of cooperative learning and social support, and it may be worthwhile developing these skills so that social and academic learning may be enhanced in the classroom (Slavin, 1990).

d. Boys have few examples of high attainment role models. The few high attaining boys in the observations tended to act and misbehave like their lower attaining male classmates. Learning efforts by these boys need to be better integrated into the classroom, possibly through acceptable (non-exaggerated) levels of reward and the opportunity to share their skills with others (Perret-Clermont, 1980).

e. Reading interests and habits showed a fundamental difference between attainment levels and boys and girls. Lowest attaining children displayed poor basic reading skills. When called upon to read in the classroom, they were often embarrassed and 'put down' when more competent readers (mainly girls) were called upon to continue the reading at an acceptable level. Additionally, more focus or encouragement should be given to those children who only select information books, such that they will also include books with story lines. Stories help children to understand sequences of events, allow them to explore for alternate answers and provide more complex answers to questions (Murphy and Elwood, 1996).

f. There were many differences observed in the behaviour of boys and girls and few opportunities for them to 'work' together. Yet, there were some classrooms observed where they worked together to their mutual benefit. When teachers 'allowed' children to sit with whom they chose, there was a strong tendency for sex segregation. Teachers frequently made boys sit next to girls to control misbehaviour. In the Barbados prestige school, though, boys and girls often chose to sit near each other. Male and female approaches to class work were often different (sometimes complementary), especially as girls presented longer, more meticulous answers and boys presented short, analytic answers (similar to descriptions of UK students identified by Murphy and Elwood, 1996). Girls, especially in the Trinidadian secondary schools, developed academic and social support groups among themselves. Boys did not take advantage of group support.

g. Homework was an important aspect of pupil learning and preparation for classwork. Many pupils, though, did not have people who can understand and help at home (this was particularly evident among boys). A strategy may be introduced which suggests how parents may help their children. Additionally, children could be assigned a homework-mate with responsibilities for communication and mutual resolution of homework problems.

School-based strategies:

a. Teaching in all of the classrooms observed was didactic, strongly controlled by the teacher. Some teachers, as found in the Barbados prestige school, showed their commitment to the school and students by their encouragement of all students. More often, though, teaching strategies involved simple dictation, question and answers, chalk and talk; these strategies emphasised a one-way flow of information which could not detect misunderstanding and alienation of students. Where student contributions were asked for, comments were directed towards the teacher or channelled through the teacher to the rest of the class. A few alternative teaching strategies were observed that involved paired and cooperative learning; these strategies enhanced children's involvement and respect for classmates. The application of these alternatives require planning and are not to be taken lightly (see Kutnick & Rogers, 1994;Jules, 1991).

b. Teachers will always be asked to attend to matters outside of their classrooms. In this 'teacher-less' time careful planning and directions for continued student work must be made. Without this planned use of student time, regressive and stereotypical behaviours are likely to occur among the children. Teachers in the prestige secondary schools were away from their classes less often than teachers in other schools, and there were correspondingly fewer incidents of misbehaviour in their classes.

c. Where school and classroom rules are ambiguously applied, it appeared that the boys are most likely to be criticised and punished (even if girls had presented the same behaviour). As all classrooms observed had boundaries for behaviour, it would be helpful for students if these boundaries could be made explicit, evident and applied equally for all students. Without clear boundaries, both expressed and perceived teacher preferences are likely to occur. Observed preference was strongly associated with the higher attainers in class (and these were, in the main, girls).

d. Strategies need to be developed to involve the full attainment range of children and ensure that the pace of the classroom does not leave some children behind. Praise need not be reserved for the first pupils to complete a learning assignment; slower pupils can be given an equal opportunity to be told of the good quality of their work (which occurred in one Trinidadian primary school and the prestige Barbados secondary school).

e. To involve students in their own learning may help to overcome the discrepancy between teachers' views that their students should be autonomous and mature and the students' perception that their leaming is teacher dependent. If students are to act as autonomous learners within their secondary schools, they must be offered and understand the opportunities for autonomy. One school that took some opportunities to promote autonomy and self-discipline among its students was the Barbados prestige school. Observations showed that all students were active participants; there was no evidence of teacher preference for particular students (by attainment or sex). Their school work and behaviour showed high levels of motivation - including full submission of homework and virtually no incidents of misbehaviour, bullying or teasing.

4. While the quantitative surveys and most of the case studies showed girls attaining at higher levels in the classroom, how generalisable are these results (from Trinidad to Barbados to St Vincent)? Generalisation should take into account the availability of school places within a country; types of schools, especially at secondary level; and the explanational value of sex differences in attainment.

a. As stated, the quantitative surveys showed that the average within-class attainment and CEE scores attained by girls was consistently higher than boys across the three countries. Generalisation from Trinidad to Barbados was expected and confirmed in the first survey. Due to the limited number of secondary school places in St Vincent we questioned whether access to secondary school would be based on educational merit or other forms of preference. In the St. Vincent survey and national data, more secondary school places were allocated to girls than boys, allocation being based on CEE results. These findings are in contrast to research in other developing countries which have shown that economic and other considerations (Brock and Cammish, 1997) combine to allow privileged access to schooling to males.

b. The drop-off in male participation in schooling, especially during the transition to and during secondary schooling, was confirmed in Barbados and St Vincent. Educators should look to school placement and activities within the classroom as arenas that may be used to enhance male attainment, knowing that societal attitudes and parental behaviour will affect attainment as well.

c. To make the statement that females perform at higher levels than males would be an oversimplification of the research. Sex of the children was

only one significant factor in the explanation of attainment in school. Factors such as occupation of parents, with whom the child lives, attendance of pre-school and the type of school attended each contributed more of the variance in attainment than the sex of the child.

d. Within schools, the case studies showed practices which allowed for the inclusion or exclusion of certain children (especially low attainers, a number of which are male). 'Cultures' of particular schools may help to overcome or magnify these distinctions in attainment (between the sexes and children of different parental occupations). The culture found in prestige schools overcame sex and social class differences among students in Barbados and St Vincent. Differentiation and division of attainment by sex and social class has characterised the other types of secondary school in these countries.

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