

A TRACER STUDY OF STUDENT PERFORMANCE ON CXC CHEMISTRY AND A'LEVEL CHEMISTRY IN TRINIDAD AND TOBAGO

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In Trinidad and Tobago, the demand for sixth form places to pursue A-level studies continues to outstrip the supply. Typically, school administrators have used performance at the CXC examinations as the main criterion for selection of students to pursue A-level work in a given subject. This paper explores the validity of this practice with respect to the study of chemistry, by presenting the results of a tracer study which determined the relationship between student performance on CXC chemistry during the period 1989-1992 and the corresponding performance of these students on A-level chemistry two years later (1991-1994).

Data were obtained from a sample of 1485 students drawn from the population of public secondary schools in Trinidad and Tobago. The analysis reveals a moderate and statistically significant correlation coefficient of 0.49 between the overall CXC chemistry grade and overall GCE A-level chemistry grade. Higher correlation coefficients were obtained for girls in the sample than for boys. When the data were analyzed by school type, the highest correlation was obtained for girls in the traditional girls' schools. Further analysis by multiple regression revealed that 31% of the variance in A-level performance was accounted for by the performance on the CXC profile of recall and understanding; a further 10% of the variance was due to performance on the CXC enquiry skill profile. The paper argues that, although overall performance on CXC chemistry seems to be acting as a reasonable predictor of performance at A-level chemistry, school administrators need to pay special attention to CXC profile grades. They may also need to consider other factors, especially with respect to the boys who seem capable of showing some improvement in grades in moving from CXC to A-level chemistry.

Introduction

The selection function of educational assessment is the focus of this paper. Although the selection of students is only one of the functions of educational assessment, it is an important and dominant function (Murphy & Torrance, 1988). This is particularly so in our Caribbean context, where the demand for jobs and for higher education continues to exceed the availability of opportunities in these areas. As a result, examination results are often used to decide who gets the scarce jobs and the limited number of spaces in the education system.

The paper looks specifically at the selection of students for the study of A-level chemistry in a situation of limited access. It reports on a study of the performance of students in a sample of schools in Trinidad and Tobago on the Caribbean Examinations Council (CXC) chemistry examination over the period 1989-1992 and the performance of these same students on the Cambridge General Certificate of Education (GCE) A-level chemistry examination two years later (1991-1994). The study specifically explores the relationship between performance on CXC chemistry and performance on Cambridge A-level chemistry, since, selection for entry into A-level chemistry classes is usually based on performance at CXC chemistry.

This study follows on that done by Herbert (1992) in which she examined the predictive validity of CXC chemistry for A-level chemistry. Herbert's sample was drawn from 7-year Government and Assisted schools in Port of Spain only. For the present study, all of the public secondary schools in Trinidad and Tobago were used as the population from which the sample was drawn. The present study is, therefore, more reflective of the national community of A-level chemistry graduates in Trinidad and Tobago.

As indicated above, the selection of students for entry into A-level chemistry classes is based on performance at CXC chemistry. Some degree of competition is involved in the selection process because there are usually more applicants than available places in the schools with sixth forms. There are also some schools which produce CXC graduates with good results in chemistry but which do not offer chemistry at A-level. The net result of this shortage of sixth form places in chemistry is that principals attempt to choose the best CXC graduates for places in the

sixth form, both from students who have come through their school and from students who are attempting to transfer from schools with no A-level chemistry class.

The CXC provides detailed information about a candidate's performance in chemistry (and all other subjects). In addition to giving the candidate an overall chemistry grade (ranging from grade 1, the highest, to grade 5), the Council also provides information on the candidate's performance on four profiles - recall and understanding; enquiry skills; practical skills and attitudes. The matriculation requirement for entry into A-level chemistry classes, as stipulated by the Ministry of Education, is a grade 1 or grade 2 at CXC chemistry. Often, administrators have to select from among students with the same overall Grade 2 but with differing grades on the respective profiles. Which, if any, of these profiles is the most important determinant of success at A-level chemistry? This study attempts to examine the level of performance on the two chemistry examinations being considered, and, more importantly, to explore the relationship between performance on CXC chemistry and performance on A-level chemistry for a national sample.

Summary of Related Work Previously Done

Murphy (1981) obtained correlation coefficients ranging from 0.44 to 0.68 between performance on GCE Ordinary-level and Advanced-level chemistry examinations from the various examination boards in England. In Jamaica, Leo-Rhynie (1984) obtained a correlation coefficient of 0.61 between GCE O-level and A-level chemistry results from a sample of seven schools, randomly selected throughout the island. Similar results were obtained in Jamaica by Hamilton (1981) in an earlier study.

Herbert's (1992) sample, which was drawn from the relatively prestigious 7-year Government Assisted schools in Port of Spain, was a fairly homogenous group. She obtained a Kendall's tau correlation coefficient of 0.43 between CXC chemistry grades and A-level chemistry grades. Herbert further found that the CXC enquiry skills profile accounted for the largest portion of the variance in A-level chemistry scores. The correlation coefficients between the A-level chemistry grades, and the enquiry skills profile grades and the recall and understanding profile grades respectively were both moderate and significant ($\tau = 0.46$ and 0.42 respectively). The coefficients between A-level chemistry scores and

CXC attitude scores and scores on the practical skills respectively were low, though significant ($\tau = 0.19$ and 0.13 respectively). The data also showed that males showed a significantly better overall performance at CXC chemistry than females. However, gender had no bearing on the performance of candidates at GCE A-level chemistry for the sample studied.

Herbert's (1992) study provided some indicators where there were none previously. This study, using a national sample, was undertaken to obtain even more pertinent information.

The Sample

The strategy used to collect data was to obtain the A-level chemistry results for the years being studied and to trace the corresponding CXC results of these students two years earlier. The schools with sixth form chemistry classes were, therefore, used as the starting point. Schools in Trinidad and Tobago with sixth forms are typically classified broadly as Government schools (including Senior Comprehensive schools) and Government Assisted schools. For the period studied, these schools existed in the ratio $0.4 : 0.6$ (approximately) and the sample of schools was randomly chosen to reflect this ratio. It was also chosen to mirror, as closely as possible, the population ratios among boys' schools, girls' schools and mixed (co-ed) schools. Purposeful sampling was done in the case of Tobago, with the (only) 7-year Government Assisted school there being chosen. In all, 21 schools were chosen. This represents about 50% of the total number of eligible schools.

In these 21 schools, there were 661 females and 824 males (total = 1485) for whom complete data were available, with CXC chemistry results being obtained in the period 1989-1992 and the corresponding GCE A-level grade being obtained two years later in the period 1991-1994. The data reflect the grades obtained by each candidate at the first attempt at each of the two examinations under study. The data represent grades for 85% of the students in the Government Assisted schools chosen and 50% of the students in the Government schools chosen. This relatively small volume of data from Government schools is due to the fact that many of the A-level chemistry students in these schools (particularly the Senior Comprehensive schools) had done their CXC chemistry examination in a different school (usually one without a sixth form) and had secured a

transfer to pursue A-level studies. Records on these students were often incomplete or inaccessible. It should be noted that there were some female graduates from a few of the boys' schools, but this number was relatively small.

Procedure and Analysis

Prior to the analysis of data, slight changes were made to the classification scheme for schools. The Government Assisted girls' schools were termed "7-year traditional girls' schools" (where the "traditional" schools are contrasted with the newer schools) and the lone 7-year Government girls' school was added to this group. In a similar vein, the Government Assisted boys' schools were re-named "7-year traditional boys' schools" and the lone 7-year Government boys' school was added to this group. Finally, the lone 7-year Government Assisted mixed school and the lone 7-year Government mixed school in the sample were grouped together as "7-year traditional mixed schools." The Senior Comprehensive schools were kept as a separate group. The listing and classification of participating schools is shown in Appendix A. Of the 1485 students, 524 (35.3%) were from traditional 7-year girls' schools, 711 (47.9%) were from traditional 7-year boys' schools, 119 (8.0%) were from the two 7-year traditional mixed schools and 131 (8.8%) were from Senior Comprehensive (mixed) schools.

The data pertaining to examination grades were coded using the following schemes:

A-level chemistry grade

Code

Fail	1
O-level pass	2
E	3
D	4
C	5
B	6
A	7

<u>CXC chemistry grade</u>	<u>Code</u>
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2	1
1	2

<u>CXC chemistry profile</u>	<u>Code</u>
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C	1
B	2
A	3

The coded data were subjected to computer analysis using the SPSS computer program. In particular, the program was used to generate statistics in the attempt to find answers to the following research questions:

1. What was the level of performance on CXC chemistry:
 - (i) for the 4-year period
 - (ii) by year
 - (iii) by gender
 - (iv) by school-type (4-year period)?
2. What was the level of performance on the various CXC chemistry profiles for the 4-year period?
3. What was the level of performance on A-Level chemistry for the 4-year period?
4. What was the nature of the relationship between performance on CXC chemistry and performance on A-Level chemistry for the 4-year period:
 - (i) overall
 - (ii) by gender
 - (iii) by school-type?
5. Which profile, or combination of profiles, is the best predictor of success at A-Level chemistry?

Performance at CXC Chemistry, 1989-1992

All graduates in the sample who had written the A-Level chemistry examination during the period 1991-1994 had obtained either a Grade 1 or a Grade 2 in CXC chemistry. Of the 1485 cases examined, 827 (55.7%) had obtained a Grade 1 and 658 (44.3%) had obtained a Grade 2. Overall performance among female candidates was higher (mean grade = 1.60; standard deviation = 0.49) than among male candidates (mean grade = 1.52; standard deviation = 0.50). This observed difference was statistically significant ($p < 0.01$). The grand mean for the entire sample was 1.56 with a standard deviation of 0.50.

When the data were desegregated according to school type (see Table 1), it was found that graduates of the traditional 7-year girls' schools had the highest mean score for the period (mean = 1.71; standard deviation = 0.45) and graduates of Senior Comprehensive schools had the lowest mean score (mean = 1.25; standard deviation = 0.44).

Table 2 shows that the highest overall mean score for CXC chemistry for the sample (mean = 1.71, standard deviation = 0.45) was obtained in 1989. Thereafter, the level of performance fell and reached a fairly constant level during the period 1991-1992.

The performance of graduates on the four profiles - recall and understanding, enquiry skills, practical skills and attitudes is reflected in Tables 3-4. Graduates performed best on the recall and understanding profile over the 4-year period, with 65.3% of them attaining a Grade A on this profile (Table 3). Performance on the enquiry skills profile was the lowest, with 42.8% of the sample attaining a Grade A on this profile.

Table 1

Mean CXC Chemistry Score x School Type for the Period 1989-1992

School type	Mean score	Standard deviation
Traditional 7-year girls'	1.71	0.45
Traditional 7-year boys'	1.55	0.50
Traditional 7-year mixed	1.28	0.45
Senior Comprehensive mixed	1.25	0.44

Table 2

Mean Overall CXC Chemistry Score for Period 1989-1992

Year	# of students	Mean score	Standard deviation
1989	365	1.71	0.45
1990	334	1.43	0.50
1991	379	1.54	0.50
1992	407	1.53	0.50
1989-1992	1485	1.56	0.50

Table 3
Frequency Distribution of Performance on Chemistry Profiles
Over Period 1989-1992

Profiles	Profile Grade					
	A		B		C	
	N	% of sample	N	% of sample	N	% of sample
Recall and understanding	970	65.3	499	33.6	16	1.1
Enquiry skills	636	42.8	800	53.9	49	3.3
Practical skills	886	59.7	563	37.9	36	2.4
Attitudes	868	58.5	581	39.1	36	2.4

Table 4
Mean Scores on CXC Chemistry Profiles Over Period 1989-1992

Profiles	Mean score	Standard deviation
Recall and understanding	2.64	0.50
Enquiry skills	2.40	0.55
Practical skills	2.57	0.54
Attitudes	2.56	0.54

Similar conclusions are arrived at when one examines the overall mean score attained on each of these profiles (Table 4). It is noteworthy that very small percentages of the sample achieved a Grade C on the various profiles (Table 3).

Performance on A-Level Chemistry, 1991-1994

Data on the performance of candidates on the individual papers in the A-Level examination were not available. The frequency distribution in Table 5 shows the performance of graduates in terms of their overall grade in A-Level chemistry over the 4-year period. Just over 80% of the sample were successful in the examination. Only 2.7% failed the examination outright and 15.1% had been awarded an O-level pass. Grade A (distinction) was obtained by 16.9% of the sample.

Relationship Between Performance on CXC Chemistry and A-level Chemistry

Table 6 shows that the vast majority of the graduates obtaining a Grade A at A-Level chemistry (94.8%) had obtained a Grade 1 at CXC chemistry, while 77.0% of those obtaining Grade B and 65.4% of those obtaining Grade C had also scored Grade 1 at CXC chemistry. Of the 40 graduates who had failed A-Level chemistry, only two (5%) had obtained Grade 1 at CXC.

Table 7 shows these data desegregated further by gender. Of the 13 Grade 2 students who obtained Grade A at A-Levels, 12 were boys and only 1 was a girl. In a similar vein, of the 63 Grade 2 students scoring Grade B at A-Level, 43 were boys and 20 were girls. On the other hand, with respect to the Grade 1 sub-group, roughly equal percentages of the male (28.0%) and female (29.6%) students obtained Grade A at A-Levels. Thus, CXC Grade 1 students of both genders shared equal honours at the upper end of the A-Level performance scale, while the few CXC Grade 2 students who scored at this upper end at A-Level were mainly male. At the lower end of the A-Level performance scale, relatively small numbers of Grade 1 students of either gender had failed outright or obtained an O-Level pass in the A-Level examination, while 32.6% of the male Grade 2 sub-group and 36.3% of the female Grade 2 sub-group had suffered a similar fate.

Table 5

Frequency Distribution Showing Performance at A-Level Chemistry,
1991-1994

Grade	N	% of sample	Cumulative percentage
A	251	16.9	16.9
B	274	18.5	35.4
C	263	17.7	53.1
D	247	16.6	69.7
E	186	12.5	82.2
O-Level pass	224	15.1	97.3
Fail	40	2.7	100.0
TOTAL	1485	100.0	

Table 6

Frequency Distribution Showing CXC Chemistry Grade x A-Level Chemistry Grade

CXC chemistry grade	A-Level chemistry grade							TOTAL
	Fail	O-Level	E	D	C	B	A	
1	2(0.2)* (5.0)+	38(4.6) (17.0)	45(5.4) (24.2)	121(14.6) (49.0)	172(20.8) (65.4)	211(25.5) (77.0)	238(28.8) (94.8)	827(55.7)+
2	38(5.8) (95.0)	186(28.3) (83.0)	141(21.4) (75.8)	126(19.1) (51.0)	91(13.8) (34.6)	63(9.6) (23.0)	13(2.0) (5.2)	658(44.3)+
TOTAL	40(2.7)*	224(15.1)	186(12.5)	247(16.6)	263(17.7)	274(18.5)	251(16.9)	1485

* = Row percentage

+ = Column percentage

Table 7

Frequency Distribution Showing Performance on CXC Chemistry x Gender x Performance on A-Level Chemistry

CXC grade	Gender	A-Level chemistry grade							TOTAL
		Fail	O-Level	E	D	C	B	A	
1	M	1(0.2)*	28(6.5)	28(6.5)	64(15.0)	92(21.5)	95(22.2)	120(28.0)	428(51.8)+ 399(48.2)+
	F	1(0.3)	10(2.5)	17(4.3)	57(14.3)	80(20.1)	116(29.1)	118(29.6)	
2	M	19(4.8)	110(27.8)	85(21.5)	70(17.7)	57(14.4)	43(10.9)	12(3.0)	396(60.2)• 262(39.8)•
	F	19(7.3)	76(29.0)	56(21.4)	56(21.4)	34(13.0)	20(7.6)	1(0.4)	
TOTAL		40	224	186	247	263	274	251	1485(100)*

* = Row percentage

+ = Percentage of CXC Grade 1 sub-group

• = Percentage of CXC Grade 2 sub-group

Kendall's tau was used to examine the nature of the relationship between the CXC chemistry grade and the A-Level chemistry grade in the first instance. The analysis was done for the entire sample as well as by gender and school type. The findings are shown in Table 8. Except in the case of the Senior Comprehensive schools, the correlation coefficients obtained were all greater than 0.40, indicating a moderate association in each case. All the relationships were found to be statistically significant ($p < 0.01$). A higher coefficient was obtained for the female sub-group (0.56) than for the male sub-group (0.44), a result which supports the finding described earlier that the girls tended to maintain their academic ranking as they moved from CXC chemistry to A-Level chemistry, whereas with the boys there was some improvement. A similar trend is indicated by the finding that the correlation coefficient for traditional 7-year girls' schools (0.51) was higher than that for traditional 7-year boys' schools (0.42). A relatively high correlation coefficient ($\tau = 0.59$) was obtained for the traditional 7-year mixed schools. This sub-group consisted of only two schools and, thus, the findings may or may not be applicable to other 7-year mixed schools.

The relationship between performance on A-Level chemistry and performance on each of the four CXC chemistry profiles was also investigated using the Kendall's tau statistic. Table 9 shows that the relationships were all found to be statistically significant ($p < 0.01$) with the strongest positive associations existing with the recall and understanding profile ($\tau = 0.49$) and the enquiry skills profile ($\tau = 0.46$) respectively.

Further examination of the relationship between performance at A-Level chemistry and performance on the CXC chemistry profiles was effected by performing a stepwise multiple regression analysis, with A-Level chemistry grade as the criterion score and the scores on the four CXC chemistry profiles as the predictor variables. This procedure was employed even though the criterion and predictor variables are not fully interval variables. The regression data are shown in Table 10. They indicate that the best predictor of success at A-Level chemistry is the CXC profile, recall and understanding. This predictor variable accounted for 31% of the variance in A-Level performance. The addition of the predictor variable, enquiry skills, resulted in roughly 10% more of the variance being explained. The addition of the other two predictor variables did not result in any marked increase in the proportion of variance explained.

Table 8

**Kendall's Tau Correlation Coefficient for CXC Chemistry Grades
and A-Level Chemistry Grades**

Group	Tau	Significance
Total sample	0.49	0.0000
Males	0.44	0.0000
Females	0.56	0.0000
Trad 7-year girls'	0.51	0.0000
Trad 7-year boys'	0.42	0.0000
Trad 7-year mixed	0.59	0.0000
Senior Comprehensive	0.25	0.0006

Table 9

**Kendall's Tau Correlation Coefficient for CXC Chemistry Profile
Grades and A-Level Chemistry Grades**

Profile	Tau	Significance
Recall and understanding	0.49	0.0000
Enquiry skills	0.46	0.0000
Practical skills	0.20	0.0000
Attitudes	0.22	0.0000

Table 10

Stepwise Multiple Regression Data for CXC Chemistry Profile Grades (Predictor) and A-Level Chemistry Grades (Criterion)

Step #	Profile	Multiple R	R Square	F in full model	Significance
1	Recall and understanding	0.56	0.313	790.09	0.0000
2	Enquiry skills	0.64	0.408	238.38	0.0000
3	Attitudes	0.64	0.412	10.32	0.0013
4	Practical skills	0.64	0.413	3.82	0.0497

Discussion

In the sample investigated, there was a fair proportion of Grade 2 CXC graduates (44.3%) pursuing A-level chemistry. This is also reflected in the fact that the grand mean of the CXC chemistry grade for the entire sample was 1.56. The entry qualifications (in chemistry) of the female students were generally higher (mean grade = 1.60) than those of their male counterparts (mean grade = 1.52). The entry qualifications of students in the longer established schools were also higher than those of students in the newer schools, with girls in the 7-year traditional girls' schools having the best entry qualifications in CXC chemistry (mean grade = 1.71). Overall, CXC chemistry graduates performed best on the recall and understanding profile and worst on the enquiry skills profile. Performance on the recall and understanding profile carries a weighting of 40% of the total, whereas performance on the enquiry skills profile carries a weighting of 30% of the total (CXC, 1983).

The overall performance of the graduates on A-level chemistry was generally good, with more than 80% of them securing a pass. The Kendall's tau correlation coefficient between CXC chemistry grades and A-level chemistry grades for the entire sample was statistically significant ($p < 0.01$), with a value of 0.49. This is a moderate relationship and is of the same order as that obtained by Herbert in 1992 ($\tau = 0.43$) for a sample drawn from traditional schools in Port of Spain only.

Of the 13 Grade 2 chemistry students who secured an A grade at A-level chemistry, 12 were boys. Although this represents only a small portion of the sample, this phenomenon is striking. A similar trend is reflected in the relative proportions of male and female CXC Grade 2 students securing Grades B and C respectively at A-level chemistry (Table 7). In each case, the proportion of male students was higher. In a related vein, a higher percentage of Grade 2 CXC female students achieved O-level and failure grades than their male counterparts. All of these findings point to the position that the performance of girls is more constant in the transition from CXC to A-level than is the performance of the boys, with the boys tending to show some improvement.

Students in sixth forms in Senior Comprehensive schools are usually a motley group. Typically, they come from many different schools and have had varying experiences of CXC chemistry. What unites them is that they have all attained either a Grade 1 or a Grade 2 at CXC chemistry. For this group, the Kendall's tau coefficient between CXC chemistry scores and A-level chemistry scores was found to be relatively low (0.25), though significant.

A higher Kendall's tau coefficient between CXC chemistry grades and A-level chemistry grades was obtained for girls in the sample ($\tau = 0.56$) than for boys ($\tau = 0.44$). A similar trend was obtained for the 7-year traditional girls' schools ($\tau = 0.51$) and the 7-year traditional boys' schools ($\tau = 0.42$). As alluded to earlier, these findings suggest that girls tend to be more consistent in their performance as they move from the CXC level to A-level in chemistry. Herbert (1992) and Leo-Rhynie (1984) found similar trends in the samples they studied.

It is the view of Figueroa (cited in Carew, 1996) that the socialization of girls towards a more disciplined approach to study is rewarded in their school performance. Boys, he claims, are given more freedom and privilege which may not allow for the best school performance. This hypothesis, by itself, would not explain why some boys seem to "catch up" in their later high school years. It may well be that the later maturation of boys may be having a significant impact on their school performance during this period.

The stepwise multiple regression analysis revealed that the best predictor of success at A-level chemistry was performance on the CXC recall and

understanding profile. It accounts for 31% of the variance in performance in A-level chemistry. The next best predictor was performance on the enquiry skills profile, accounting for 10% more of the variance in the A-level scores. The attitudes and practical skills profiles contributed very little more to the variance explained. Herbert (1992) had found that the enquiry skills profile was the best predictor, followed by the recall and understanding profile, with much less contribution from the attitudes and practical skills profiles.

Performance on the recall and understanding and the enquiry skills profiles should, therefore, be given prominence in the decision-making process with respect to acceptance into A-level chemistry classes. Students who have secured a Grade 1 are likely to have obtained high grades on these two profiles. When decisions are to be made among Grade 2 applicants for sixth form chemistry places, performance on these two profiles should be scrutinized carefully. It must, however, be appreciated that approximately 60% of the variance in A-level chemistry scores is unaccounted for by previous CXC performance. School administrators may, therefore, also need to consider factors such as motivation and maturation levels of the individuals concerned, particularly the boys.

An examination will serve well as a good predictor of success in another examination if both examinations are based on similar philosophies and seek to measure similar types of behaviours. The results of this study seem to suggest that the attitudes and practical skills deemed worthy of examination by the Caribbean Examinations Council did not seem to be as important for meeting the requirements outlined by the University of Cambridge Overseas Examination Syndicate. A recent development is that CXC has, from 1993, removed the attitude profile from its assessment scheme in chemistry. The reasons for this are not clear, but it is to be hoped that teachers still see the value of teaching for the development of positive attitudes in science, and towards science, in their chemistry classes. It is also to be hoped that students graduating from CXC chemistry as well as A-level chemistry will have acquired a fair degree of proficiency in practical skills.

Summary and Recommendations

Students possessing both Grade 1 and Grade 2 scores in CXC chemistry pursued the A-level chemistry examination in the period studied. The corresponding overall performance on A-level chemistry was generally good, suggesting that these CXC qualifications that used for entry into A-level chemistry classes are reasonable. This was reinforced by the reasonable correlation coefficient obtained between performance on CXC chemistry and performance on A-level chemistry. However, the results do indicate that if school administrators are to act as fairly as possible in the selection process, some other factors may need to be considered. These are summarized as follows:

- (i) The CXC chemistry profile grades for recall and understanding and enquiry skills should be scrutinized carefully as these seem to be the better indicators of success at A-level chemistry.
- (ii) Since girls tend to maintain their level of performance from CXC chemistry to A-level chemistry, girls with a Grade 1 in CXC chemistry and with high profile grades on recall and understanding and enquiry skills can be expected to do well at A-level chemistry, and should be given the chance to do so.
- (iii) The performance of some boys seems to improve in the transition from CXC chemistry to A-level chemistry. Consequently, although the CXC chemistry grade should be considered in the selection process, consideration should also be given to the potential for improvement as the boys mature in the two-year sixth form period.

These findings do not present administrators with clear-cut guidelines for making selections for the study of A-level chemistry. What they do indicate, though, is that the current practice of considering CXC chemistry grades as a predictor of success at A-level chemistry is a reasonable one, but that levels of maturity and motivation should perhaps be considered in the selection of boys for the study of A-level chemistry.

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APPENDIX A

LIST OF SCHOOLS

Traditional 7-year girls' schools

Bishop Anstey High School, Port of Spain
Holy Faith Convent, Couva
Holy Name Convent, Port of Spain
St. Augustine Girls' High School, St. Augustine
St. Francois Girls' College, Port of Spain
St. Joseph's Convent, Port of Spain
St. Joseph's Convent, San Fernando

Traditional 7-year boys' schools

Hillview College, Tunapuna
Naparima College, San Fernando
Presentation College, Chaguanas
Presentation College, San Fernando
Queen's Royal College
St. Mary's College, Port of Spain
Trinity College, Maraval

Traditional 7-year mixed schools

Bishop's High School, Scarborough
North Eastern College, Sangre Grande

Senior Comprehensive schools

Pleasantville Senior Comprehensive
Princes Town Senior Comprehensive
Signal Hill Senior Comprehensive
Siparia Senior Comprehensive
St. Augustine Senior Comprehensive