

*Study of
Science in
Primary Schools
2003*



NIHERST
NATIONAL INSTITUTE
OF HIGHER EDUCATION
RESEARCH SCIENCE AND TECHNOLOGY
INCORPORATED BY ACT 19 HIGHER EDUCATION ACT 1998

Copyright © August 2004 by NIHERST

NIHERST
4 Serpentine Place
St. Clair
Port of Spain
Trinidad

All rights reserved. No part of this publication may be reproduced or transmitted in any form or by any means, or stored in a database or retrieval system without the prior written permission of NIHERST.

Foreword

This report presents the results of the Primary School Science Survey conducted by the National Institute of Higher Education, Research, Science and Technology (NIHERST) during the fourth quarter of 2003.

The Primary School Science Survey, 2003 was a two-part enquiry of principals and of teachers in standards 2 to 5 in each of the selected government, government assisted and private primary schools. Data obtained are therefore shown separately for these two groups of respondents in this report. The report focuses on the qualification of principals and teachers and the availability and adequacy of material resources necessary for the teaching of science in primary schools. Data on the difficulties teachers encounter in the teaching of various strands in the science curriculum together with information on teaching methods employed and assistance required have also been compiled.

The introduction of science teaching at primary level has been described as a recent innovation in science education in many countries. Early exposure to science education is essential to total childhood development and should be administered by qualified educators provided with adequate resources. Primary science education is also key to the establishment of a skilled labour force of which, as in our case, a significant component of one-third, reports primary education as their highest level of academic attainment.

This publication should engage the attention of researchers, decision-makers, educators and stakeholders in general.

NIHERST wishes to thank the Ministry of Education for approving the conduct of this study in primary schools. We also acknowledge the co-operation of the targeted principals and teachers who provided the necessary information.

Science and Technology
Statistical Unit
8 Serpentine Road
St. Clair
628-1154
e-mail: stresearch@niherst.gov.tt
website: <http://niherst.gov.tt>

Maureen Manchouck
President

Table of Contents

	Page
Foreword	i
Data Highlights	ix
Methodology	xi
Table	
<i>Principals</i>	
1. Number of Principals by Educational District, Type of School and Gender	1
Chart 1. Percentage of Principals by Gender within Educational District	1
1a. Percentage of Principals by Educational District, Type of School and Gender	2
Chart 2. Percentage of Principals by Gender within Type of School	2
2. Number of Principals With/Without O'Level or C.X.C. Pass in Mathematics by Educational District and Type of School	3
Chart 3. Percentage of Principals With/Without O'Level or C.X.C. Pass in Mathematics by Educational District	3
2a. Percentage of Principals With/Without O'Level or C.X.C. Pass in Mathematics by Educational District and Type of School	4
Chart 4. Percentage of Principals With/Without O'Level or C.X.C. Pass in Mathematics by Type of School	4
3. Number of Principals With/Without O'Level or C.X.C. Pass in Computer Science by Educational District and Type of School	5
Chart 5. Percentage of Principals With/Without O'Level or C.X.C. Pass in Computer Science by Educational District	5
3a. Percentage of Principals With/Without O'Level or C.X.C. Pass in Computer Science by Educational District and Type of School	6
Chart 6. Percentage of Principals With/Without O'Level or C.X.C. Pass in Computer Science by Type of School	6
4. Number of Principals With/Without O'Level or C.X.C. Pass in Biology by Educational District and Type of School	7
Chart 7. Percentage of Principals With/Without O'Level or C.X.C. Pass in Biology by Educational District	7
4a. Percentage of Principals With/Without O'Level or C.X.C. Pass in Biology by Educational District and Type of School	8
Chart 8. Percentage of Principals With/Without O'Level or C.X.C. Pass in Biology by Type of School	8
5. Number of Principals With/Without O'Level or C.X.C. Pass in Chemistry by Educational District and Type of School	9
Chart 9. Percentage of Principals With/Without O'Level or C.X.C. Pass in Chemistry by Educational District	9
5a. Percentage of Principals With/Without O'Level or C.X.C. Pass in Chemistry by Educational District and Type of School	10
Chart 10. Percentage of Principals With/Without O'Level or C.X.C. Pass in Chemistry by Type of School	10
6. Number of Principals With/Without	
O'Level or C.X.C. Pass in Physics by	

	Educational District and Type of School	11
	Chart 11. Percentage of Principals With/Without O'Level or C.X.C. Pass in Physics by Educational District	11
6a.	Percentage of Principals With/Without O'Level or C.X.C. Pass in Physics by Educational District and Type of School	12
	Chart 12. Percentage of Principals With/Without O'Level or C.X.C. Pass in Physics by Type of School	12
7.	Number of Principals With/Without O'Level or C.X.C. Pass in Integrated Science by Educational District and Type of School	13
	Chart 13. Percentage of Principals With/Without O'Level or C.X.C. Pass in Integrated Science by Educational District	13
7a.	Percentage of Principals With/Without O'Level or C.X.C. Pass in Integrated Science by Educational District and Type of School	14
	Chart 14. Percentage of Principals With/Without O'Level or C.X.C. Pass in Integrated Science by Type of School	14
8.	Number of Principals With/Without O'Level or C.X.C. Pass in Science by Educational District and Type of School	15
	Chart 15. Percentage of Principals With/Without O'Level or C.X.C. Pass in Science by Educational District	15
8a.	Percentage of Principals With/Without O'Level or C.X.C. Pass in Science by Educational District and Type of School	16
	Chart 16. Percentage of Principals With/Without O'Level or C.X.C. Pass in Science by Type of School	16
9.	Number of Principals With/Without O'Level or C.X.C. Pass in Human and Social Biology by Educational District and Type of School	17
	Chart 17. Percentage of Principals With/Without O'Level or C.X.C. Pass in Human and Social Biology by Educational District	17
9a.	Percentage of Principals With/Without O'Level or C.X.C. Pass in Human and Social Biology by Educational District and Type of School	18
	Chart 18. Percentage of Principals With/Without O'Level or C.X.C. Pass in Human & Social Biology by Type of School	18
10.	Number of Principals With/Without A' Level Passes in Mathematics, Computer Science, Biology, Chemistry and Physics by Type of School	19
	Chart 19. Percentage of Principals With/Without A' Level Passes in Mathematics, Computer Science, Biology, Chemistry and Physics - All Schools	19
10a.	Percentage of Principals With/Without A' Level Passes in Mathematics, Computer Science, Biology, Chemistry and Physics by Type of School	20
11.	Number of Principals with Tertiary Qualification by Type of School, Non-professional	21
11a.	Percentage of Principals with Tertiary Qualification by Type of School, Non-professional	21
	Chart 20. Percentage of Principals with Tertiary Qualification by Type of School, Non-professional	
12.	Number of Principals by Highest Level of Professional Training, Educational District and Type of School	22
12a.	Percentage of Principals by Highest Level of Professional Training, Educational District and Type of School	23
	Chart 21. Percentage of Principals by Highest Level of Professional Training and Educational District	24
	Chart 22. Percentage of Principals by Highest Level of Professional Training and Type of School	24

13.	Number of Principals With/Without Administrative Training by Educational District and Type of School	25
	Chart 23. Percentage of Principals With/Without Administrative Training by Educational District	25
13a.	Percentage of Principals With/Without Administrative Training by Educational District and Type of School	26
	Chart 24. Percentage of Principals With/Without Administrative Training by Type of School	26
14.	Number of Primary Schools With/Without Science Room by Educational District and Type of School	27
	Chart 25. Percentage of Primary Schools With/Without Science Room by Educational District	27
14a.	Percentage of Primary Schools With/Without Science Room by Educational District and Type of School	28
	Chart 26. Percentage of Primary Schools With/Without Science Room by Type of School	28
15.	Number of Primary Schools With/Without Well Equipped Science Rooms by Educational District and Type of School	29
15a.	Percentage of Primary Schools With/Without Well Equipped Science Rooms by Educational District and Type of School	30
	Chart 27. Percentage of Primary Schools With/Without Well Equipped Science Rooms by Educational District	31
16.	Number of Primary Schools With/Without Adequate Science Materials by Educational District and Type of School	32
	Chart 28. Percentage of Primary Schools With/Without Adequate Science Materials by Educational District	32
16a.	Percentage of Primary Schools With/Without Adequate Science Materials by Educational District and Type of School	33
17.	Number of Primary Schools With/Without Science Room by Enrolment	34
17a.	Percentage of Primary Schools With/Without Science Room by Enrolment	34
	Chart 29. Percentage of Primary Schools With/Without Science Rooms by Enrolment	35
18.	Number of Primary Schools With/Without Well Equipped Science Rooms by Enrolment	36
18a.	Percentage of Primary Schools With/Without Well Equipped Science Rooms by Enrolment	36
	Chart 30. Percentage of Schools with Well Equipped Science Rooms by Enrolment	37
19.	Number of Primary Schools With/Without Adequate Science Materials by Enrolment	38
19a.	Percentage of Primary Schools With/Without Adequate Science Materials by Enrolment	38
	Chart 31. Percentage of Schools with Adequate Science Materials by Enrolment	39
20.	Distribution of Computers by Educational District and Type of School	40
	Chart 32. Percentage of Schools with Computer by Educational District	41
	Chart 33. Mean Number of Students per Computer by Educational District	41
21.	Distribution of Computers by Enrolment	42
22.	Percentage Distribution of Information and Communication Equipment by Educational District and Type of School	43
	Chart 34. Percentage of Schools with Information and Communication Equipment by Educational District	44

23.	Percentage Distribution of Information and Communication Equipment by Enrolment	46
24.	Areas Considered Priority in Science Education by Educational District	47
	Chart 35. Percentage Distribution of Priority Areas - All Districts	47
	<i>Teachers</i>	
25.	Number of Teachers by Educational District, Standard and Gender	48
25a.	Percentage of Teachers by Gender within Educational District and Standard	49
	Chart 36. Percentage of Teachers by Gender within Standard - All Educational Districts	49
26.	Number of Teachers by Type of School, Standard and Gender	50
	Chart 37. Percentage of Teachers by Gender within Standard - Government Schools	50
26a.	Percentage of Teachers by Gender within Type of School and Standard	51
	Chart 38. Percentage of Teachers by Gender within Standard – Government Assisted Schools	51
	Chart 39. Percentage of Teachers by Gender within Standard - Private Schools	51
27.	Number of Teachers With/Without O'Level/C.X.C. Pass in Mathematics by Educational District, Type of School and Gender	52
27a.	Percentage of Teachers With/Without O'Level/C.X.C. Pass in Mathematics by Educational District, Type of School and Gender	53
	Chart 40. Percentage of Teachers With/Without O'Level/C.X.C. Pass in Mathematics by Educational District	54
28.	Number of Teachers With/Without O'Level/C.X.C. Pass in Computer Science by Educational District, Type of School and Gender	55
28a.	Percentage of Teachers With/Without O'Level/C.X.C. Pass in Computer Science by Educational District, Type of School and Gender	56
	Chart 41. Percentage of Teachers With/Without O'Level/C.X.C. Pass in Computer Science by Educational District	57
29.	Number of Teachers With/Without O'Level/C.X.C. Pass in Biology by Educational District, Type of School and Gender	58
29a.	Percentage of Teachers With/Without O'Level/C.X.C. Pass in Biology by Educational District, Type of School and Gender	59
	Chart 42. Percentage of Teachers With/Without O'Level/C.X.C. Pass in Biology by Educational District	60
30.	Number of Teachers With/Without O'Level/C.X.C. Pass in Chemistry by Educational District, Type of School and Gender	61
30a.	Percentage of Teachers With/Without O'Level/C.X.C. Pass in Chemistry by Educational District, Type of School and Gender	62
	Chart 43. Percentage of Teachers With/Without O'Level/C.X.C. Pass in Chemistry by Educational District	63
31.	Number of Teachers With/Without O'Level/C.X.C. Pass in Physics by Educational District, Type of School and Gender	64
31a.	Percentage of Teachers With/Without O'Level/C.X.C. Pass in Physics by Educational District, Type of School and Gender	65
	Chart 44. Percentage of Teachers With/Without O'Level/C.X.C. Pass in Physics by Educational District	66
32.	Number of Teachers With/Without O'Level/C.X.C. Pass in Integrated Science by Educational District, Type of School and Gender	67

32a.	Percentage of Teachers With/Without O'Level/C.X.C. Pass in Integrated Science by Educational District, Type of School and Gender	68
	Chart 45. Percentage of Teachers With/Without O'Level/C.X.C. Pass in Integrated Science by Educational District	69
33.	Number of Teachers With/Without O'Level/C.X.C. Pass in Science by Educational District, Type of School and Gender	70
33a.	Percentage of Teachers With/Without O'Level/C.X.C. Pass in Science by Educational District, Type of School and Gender	71
	Chart 46. Percentage of Teachers With/Without O'Level/C.X.C. Pass in Science by Educational District	72
34.	Number of Teachers With/Without A'Level Pass in Mathematics and Science by Type of School	73
34a.	Percentage of Teachers With/Without A'Level Pass in Mathematics and Science by Type of School	73
	Chart 47. Percentage of Teachers With/Without A'Level Pass by Subject - All Schools	74
35.	Number of Teachers With/Without Tertiary Qualification by Type of School, Non-professional	75
35a.	Percentage of Teachers With/Without Tertiary Qualification by Type of School and Gender, Non-professional	75
36.	Number of Teachers by Highest Level of Professional Training, Educational District and Type of School	76
36a.	Percentage of Teachers by Highest Level of Professional Training, Educational District and Type of School	77
	Chart 48. Percentage of Teachers by Highest Level of Professional Training and Type of School	78
37.	Number of Teachers by Highest Level of Professional Training and Years of Service	79
37a.	Percentage of Teachers by Highest Level of Professional Training and Years of Service	79
38.	Description of Science Textbooks by Standard and Educational District	80
38a.	Percentage Description of Science Textbooks by Standard and Educational District	81
	Chart 49. Percentage Description of Science Textbooks by Standard - All Districts	82
39.	Suggestions for the Improvement of Science Texts by Educational District	83
	Chart 50. Suggestions for the Improvement of Science Texts - All Districts	83
40.	Conduct of Experiments by Educational District and Type of School	84
40a.	Conduct of Experiments by Educational District and Type of School - Percentage	85
	Chart 51. Conduct of Experiments by Educational District	86
41.	Strands in Science Curriculum Most Difficult to Teach by Educational District	87
	Chart 52. Strands Most Difficult to Teach - All Districts	87
42.	Strands in Science Curriculum Most Difficult to Teach by Standard	88
	Chart 53. Strands Most Difficult to Teach by Standard - Percentage of Teachers	88
43.	Percentage Rating of Science by Level of Difficulty to Teach and Educational District	90
	Chart 54. Percentage Rating of Science by Level of Difficulty to Teach and Educational District	90
44.	Percentage Rating of Mathematics by Level of Difficulty to Teach and Educational District	91
	Chart 55. Percentage Rating of Mathematics by Level of Difficulty to Teach and Educational District	91
45.	Percentage Rating of Subject by Level of Difficulty to Teach	92

	Chart 56. Percentage Rating of Subject by Level of Difficulty to Teach	92
46.	Ranking of Methods by Effectiveness in Helping Student Understand Science	93
47.	Ranking of Areas Requiring Assistance	93
48.	Percentage of Teachers Attending Workshops by Educational District	94
	Chart 57. Percentage of Teachers Attending Workshops by Educational District	94
49.	Number of Science Workshops Attended Last Five Years by Educational District	95
	Chart 58. Number of Workshops Attended Last Five Years by Educational District – Percentage of Teachers	95
50.	Attendance at Last Workshops by Educational District	96
51.	Benefits Derived from Workshops	97
	Chart 59. Benefit Derived from Workshops	97
52.	Problems Teachers Encounter when Applying the Content of Workshops	98
	Chart 60. Problems Teachers Encounter when Applying the Content of Workshops	98
53.	Update Sessions/Reports on Workshops Held in Schools by Educational Districts	99
54.	Frequency of Science Workshops	100
55.	Time Science Workshops Should be Held	100
56.	Percentage of Teachers Agreeing/Disagreeing with Suggested Statements on Science Education	101
	Chart 61. Percentage of Teachers Agreeing/Disagreeing with Suggested Statements on Science Education	102
57.	Less Emphasis/Interest by Teachers as Science is not Examinable in Secondary Entrance Assessment	103
	Chart 62. Less Emphasis/Interest as Science is not Examinable in Secondary Entrance Assessment – Percentage of Teachers	103
58.	Less Emphasis/Interest by Students as Science is not Examinable in Secondary Entrance Assessment	104
59.	Re-introduction of Science in Secondary Entrance Assessment	105
	Chart 63. Re-introduction of Science in Secondary Entrance Assessment	105
	Appendix	107

Data Highlights

Principals

- ☐ The survey data show that the male to female ratio of principals was 1:1.6 in primary schools.
- ☐ Sixty six percent (66%) of primary school principals had obtained an O'Level pass in Mathematics
- ☐ Of the sciences, 34% of principals had an O'Level pass in at least one of Biology, Chemistry, Physics or Integrated Science. However, qualification by subject ranged from 4% in Integrated Science to 25% in Biology.
- ☐ Sixty three percent (63%) of principals had a Teacher's Diploma and 20% a B.Ed. degree.
- ☐ One half of all principals (52%) acquired administrative training.
- ☐ Only one quarter of all schools (25%) had science rooms; 4% were well equipped and 10% reported an adequate supply of materials.
- ☐ Ninety two percent (92%) of the schools had computers with only 14% access to the internet. On average, there were 5 computers per school and 50 students per computer.
- ☐ Communication equipment including photocopier, television, video and cassette player was observed in 80% and over of all primary school.
- ☐ Most principals (83%) considered teaching methods as the key priority area in science education, followed by problem solving (61%) and science processes (57%).

Teachers

- ☐ The male to female teacher ratio in primary schools was 1:1.8, similar to that of principals as shown earlier. By standard, however, the male to female teacher ratio was 1:2.6 in standard two compared with an even gender distribution in standard five.
- ☐ Most teachers (84%) had acquired O'Level/C.X.C. qualification in Mathematics.
- ☐ Of the sciences, 49% of all teachers had an O'Level/C.X.C. pass in Biology, 29% in Chemistry, 18% in Physics and 7% in Integrated Science. Sixty two percent (62%) had a pass in at least one of the above subjects.
- ☐ Including all schools, less than 10% of primary school teachers had an A'Level pass in Mathematics or any of the sciences.
- ☐ Ninety percent (90%) of all teachers held professional qualification of mainly the

Teacher's Diploma.

- ☐ More than one half of the teachers (55%) indicated that the science texts were inadequate. As an improvement, 47% stated that textbooks should be in agreement with the syllabus and 42% suggested they should contain more activities/assessment exercises.
- ☐ Only 12% of all teachers conducted experiments in laboratories. A larger proportion of private primary school teachers (27%) had laboratories at their disposal, compared with government (16%) and government assisted institutions (8%).
- ☐ The majority of teachers (54%) found structure and mechanisms to be the most difficult strand in the science curriculum to teach.
- ☐ Science and composition were reported as difficult to teach by 50% of the teachers.
- ☐ Experiments/demonstrations were identified as effective in understanding science while examples in textbook were considered the least effective.
- ☐ More than 40% of the teachers required assistance in teaching methods associated with science education.
- ☐ Sixty two percent (62%) of all teachers had attended science workshops. Approximately one third (29%) had attended in 2002 and 2003 respectively.
- ☐ By attending science workshops most teachers (75%) benefited from the exposure to new teaching techniques. However, in applying the content of workshops, teachers experienced problems of time, materials and accommodation. In addition, over 80% of the teachers indicated that the workshops' topics were not applicable to the syllabus, were unsuitable for the age group and not simple enough to teach.
- ☐ Teachers indicated a decline in interest in science amongst themselves and students as the subject was discontinued in the Secondary Entrance Assessment Examination (S.E.A.). Fifty nine percent (59%) responded positively for the re-introduction of science in S.E.A.
- ☐ The results of this study indicate that the infrastructure, including qualified personnel and material resources, necessary for science education in primary schools is manifestly deficient.
- ☐ The issue of relevance between textbook, workshops and the science curriculum should also be reviewed.

METHODOLOGY

Introduction

Empirical data on manpower and physical infrastructure are key indicators in the planning and evaluation of formal science education. This methodology therefore describes the objectives, sampling design, data collection and data capture procedure employed in this study on the teaching of science in primary schools.

Objectives of the Survey

The survey was undertaken to determine:

- ☐ Principals' and teachers' educational attainment in science and professional qualifications.
- ☐ School infrastructure - science room, equipment, materials.
- ☐ Suitability, availability and suggested improvements of textbooks.
- ☐ Difficult strands in science curriculum.
- ☐ Assistance required in teaching science.
- ☐ Effective methods of understanding science.
- ☐ Science workshops attended, benefits derived and application of knowledge.
- ☐ Availability of information and communication technology equipment.
- ☐ Re-introduction of science in Secondary Entrance Assessment (SEA).

Sample Design

In selecting the sample due consideration was given to representation at the educational district level and type of school. The frame for the study was obtained from the Ministry of Education. It contained a total of 546 primary schools stratified by educational district and type of school in 2003 as shown in Table A.

Table A: No. of Schools by Educational District and Type of School

Educational district	Total	Type of school		
		Government	Government assisted	Private
All districts	546	142	341	63
P-o-S & Environs	93	25	47	21
St. George East	107	29	59	19
North Eastern	45	12	32	1
South Eastern	52	8	42	2
Caroni	68	19	48	1
Victoria	78	17	55	6
St. Patrick	63	19	38	6
Tobago	40	13	20	7

The category of government assisted include the various denominational schools.

A proportionate stratified sample was generated by taking 40% of each stratum of the population of schools in Table A. Schools were then selected by systematic random sampling.

Table B: Sample Selected by Educational District and Type of School

Educational district	Total	Type of school		
		Government	Government assisted	Private
All districts	218	58	136	24
P-o-S & Environs	36	10	18	8
St. George East	43	12	23	8
North Eastern	18	5	13	0
South Eastern	21	3	17	1
Caroni	27	8	19	0
Victoria	32	7	23	2
St. Patrick	25	8	15	2
Tobago	16	5	8	3

Data Collection

Through this selection procedure a representative sample was obtained by stratum as shown and also by school enrolment size. Two questionnaires were used for data collection on this survey – one by the principal and one by each teacher of standards 2 to 5 in the selected schools – see Appendix.

Questionnaires were mailed to each school and subsequently monitored through personal contacts and telephone. Data collection commenced in October, 2003 and was completed by December, 2003. A record **98%** response rate was achieved as can be seen from the table below.

Table C: Response by Educational District and Type of School

Educational district	Total	Type of school		
		Government	Government assisted	Private
All districts	213	57	134	22
P-o-S & Environ	35	10	18	7
St. George East	40	11	22	7
North Eastern	18	5	13	0
South Eastern	21	3	17	1
Caroni	27	8	19	0
Victoria	32	7	23	2
St. Patrick	25	8	15	2
Tobago	15	5	7	3

Data Editing and Capture

As completed questionnaires were collected, data were edited for consistency and omissions. Where discrepancies were found, questionnaires were returned to the field for verification and correction as necessary. Edited data were captured in the Statistical Package for the Social Sciences (SPSS) version 11.0 software which was used to produce the tabulations in this report.

Survey Results

The results of the survey are presented in the various tabulations and graphics which follow.

Table 1. Number of Principals by Educational District, Type of School and Gender

Educational district	No. of principals by type of school											
	All schools			Government			Government assisted			Private		
	Total	Male	Female	Total	Male	Female	Total	Male	Female	Total	Male	Female
(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)	
All districts	213	84	129	57	20	37	134	61	73	22	3	19
*P-o-S & Environs	35	11	24	10	5	5	18	5	13	7	1	6
St. George East	40	14	26	11	4	7	22	9	13	7	1	6
North Eastern	18	11	7	5	2	3	13	9	4	0	0	0
South Eastern	21	9	12	3	1	2	17	8	9	1	0	1
Caroni	27	11	16	8	1	7	19	10	9	0	0	0
Victoria	32	13	19	7	4	3	23	9	14	2	0	2
St. Patrick	25	11	14	8	2	6	15	9	6	2	0	2
Tobago	15	4	11	5	1	4	7	2	5	3	1	2

*P-o-S - Port of Spain

Chart 1. Percentage of Principals by Gender within Educational District

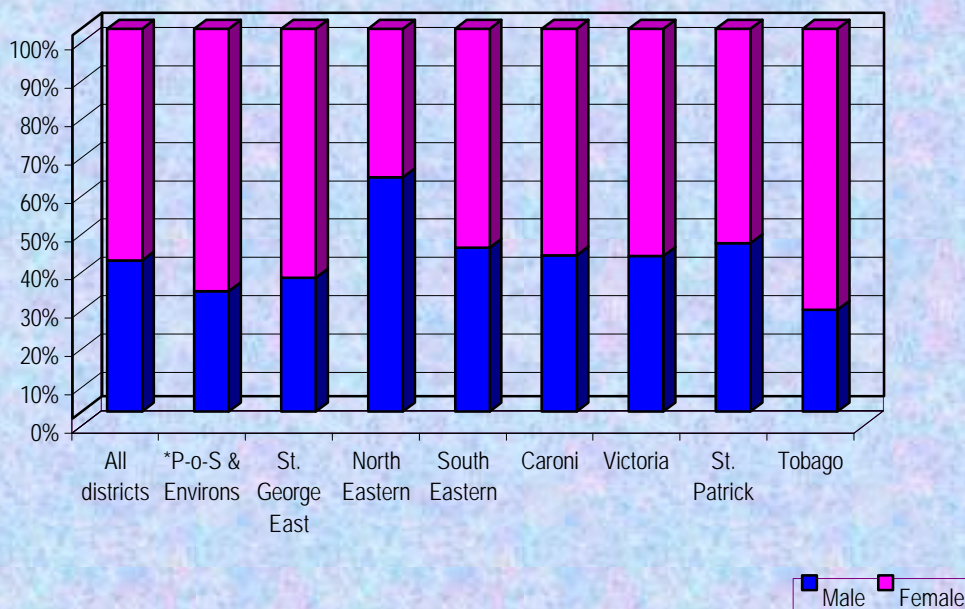
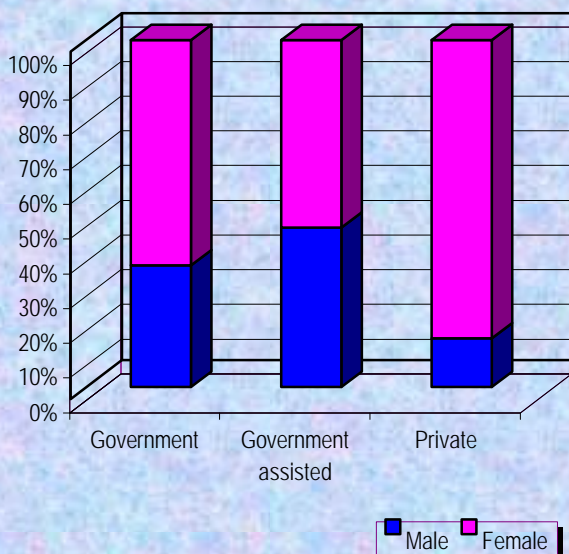


Table 1a. Percentage of Principals by Educational District, Type of School and Gender

Educational district	Percentage of principals by type of school											
	All schools			Government			Government assisted			Private		
	Total	Male	Female	Total	Male	Female	Total	Male	Female	Total	Male	Female
(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)	
All districts	100	39	61	100	35	65	100	46	54	100	14	86
P-o-S & Environs	100	31	69	100	50	50	100	28	72	100	14	86
St. George East	100	35	65	100	36	64	100	41	59	100	14	86
North Eastern	100	61	39	100	40	60	100	69	31	0	0	0
South Eastern	100	43	57	100	33	67	100	47	53	100	0	100
Caroni	100	41	59	100	13	88	100	53	47	0	0	0
Victoria	100	41	59	100	57	43	100	39	61	100	0	100
St. Patrick	100	44	56	100	25	75	100	60	40	100	0	100
Tobago	100	27	73	100	20	80	100	29	71	100	33	67

Chart 2. Percentage of Principals by Gender within Type of School



Of the sample of primary schools surveyed, the male to female ratio of principals for all schools was 1:1.6. Notable deviations from this were 1:6.1 in the private schools, 1:2.7 in Tobago and a reversal of this trend in the North Eastern district of 1:0.6 as shown in Table 1a.

Table 2. Number of Principals With/Without O'Level or C.X.C. Pass in Mathematics by Educational District and Type of School

Educational district	No. of principals with O'Level or C.X.C. pass in Mathematics by type of school											
	All schools			Government			Government assisted			Private		
	Total	Yes	No	Total	Yes	No	Total	Yes	No	Total	Yes	No
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)
All districts	213	140	73	57	42	15	134	79	55	22	19	3
P-o-S & Environs	35	17	18	10	6	4	18	5	13	7	6	1
St. George East	40	30	10	11	9	2	22	15	7	7	6	1
North Eastern	18	11	7	5	2	3	13	9	4	0	0	0
South Eastern	21	9	12	3	1	2	17	7	10	1	1	0
Caroni	27	19	8	8	6	2	19	13	6	0	0	0
Victoria	32	21	11	7	6	1	23	13	10	2	2	0
St. Patrick	25	23	2	8	8	0	15	13	2	2	2	0
Tobago	15	10	5	5	4	1	7	4	3	3	2	1

Chart 3. Percentage of Principals With/Without O'Level or C.X.C. Pass in Mathematics by Educational District

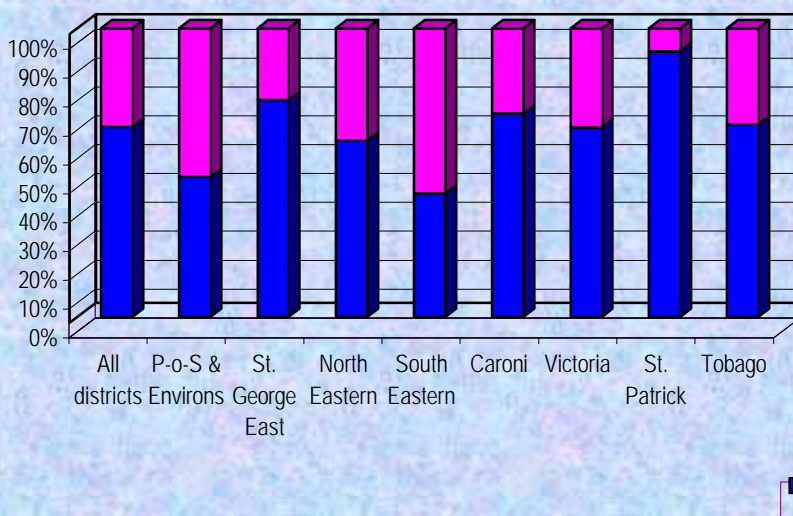


Table 2a. Percentage of Principals With/Without O'Level or C.X.C. Pass in Mathematics by Educational District and Type of School

Educational district	Percentage of principals with O'Level or C.X.C. pass in Mathematics by type of school											
	All schools			Government			Government assisted			Private		
	Total	Yes	No	Total	Yes	No	Total	Yes	No	Total	Yes	No
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)
All districts	100	66	34	100	74	26	100	59	41	100	86	14
P-o-S & Environs	100	49	51	100	60	40	100	28	72	100	86	14
St. George East	100	75	25	100	82	18	100	68	32	100	86	14
North Eastern	100	61	39	100	40	60	100	69	31	0	0	0
South Eastern	100	43	57	100	33	67	100	41	59	100	100	0
Caroni	100	70	30	100	75	25	100	68	32	0	0	0
Victoria	100	66	34	100	86	14	100	57	43	100	100	0
St. Patrick	100	92	8	100	100	0	100	87	13	100	100	0
Tobago	100	67	33	100	80	20	100	57	43	100	67	33

Chart 4. Percentage of Principals With/Without O'Level or C.X.C. Pass In Mathematics by Type of School

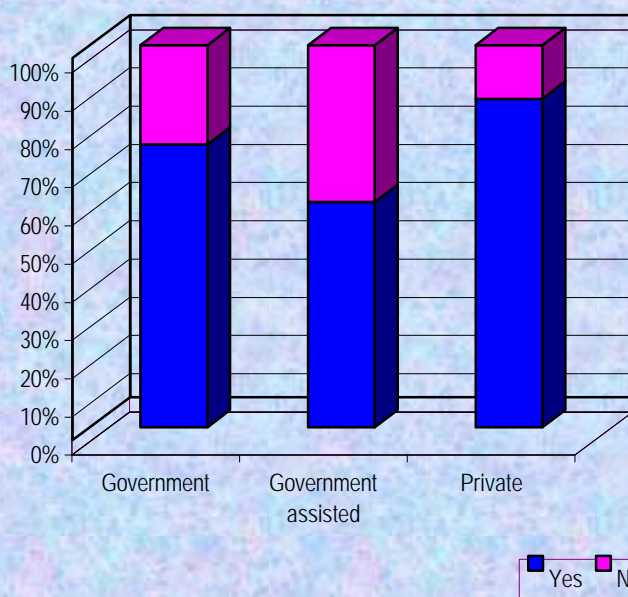


Table 2a shows that most principals (66%) had an O'Level or C.X.C. pass in Mathematics. By educational district, the highest rate of 92% of principals with an O'Level or C.X.C. pass in Mathematics was observed in St. Patrick and by type of school, 86% was reported by private primary schools.

Table 3. Number of Principals With/Without O'Level or C.X.C. Pass in Computer Science by Educational District and Type of School

Educational district	No. of principals with O'Level or C.X.C. pass in Computer Science by type of school											
	All schools			Government			Government assisted			Private		
	Total	Yes	No	Total	Yes	No	Total	Yes	No	Total	Yes	No
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)
All districts	213	9	204	57	2	55	134	7	127	22	0	22
P-o-S & Environs	35	1	34	10	0	10	18	1	17	7	0	7
St. George East	40	2	38	11	0	11	22	2	20	7	0	7
North Eastern	18	2	16	5	2	3	13	0	13	0	0	0
South Eastern	21	0	21	3	0	3	17	0	17	1	0	1
Caroni	27	1	26	8	0	8	19	1	18	0	0	0
Victoria	32	1	31	7	0	7	23	1	22	2	0	2
St. Patrick	25	1	24	8	0	8	15	1	14	2	0	2
Tobago	15	1	14	5	0	5	7	1	6	3	0	3

Chart 5. Percentage of Principals With/Without O'Level or C.X.C. Pass in Computer Science by Educational District

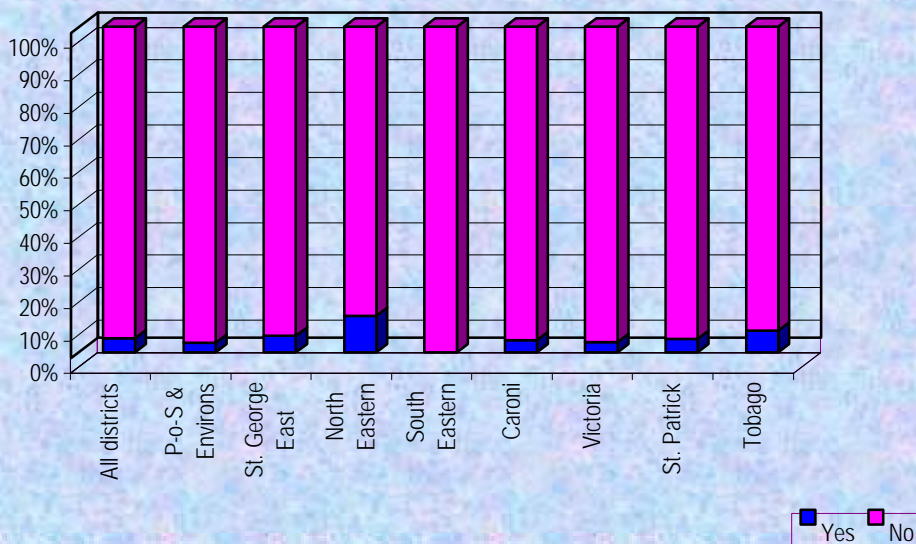
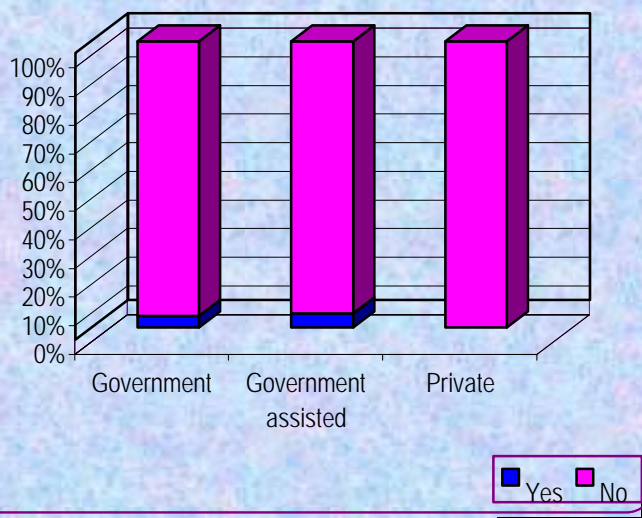


Table 3a. Percentage of Principals With/Without O'Level or C.X.C. Pass in Computer Science by Educational District and Type of School

Educational district	Percentage of principals with O'Level or C.X.C. pass in Computer Science by type of school											
	All schools			Government			Government assisted			Private		
	Total	Yes	No	Total	Yes	No	Total	Yes	No	Total	Yes	No
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)
All districts	100	4	96	100	4	96	100	5	95	100	0	100
P-o-S & Environs	100	3	97	100	0	100	100	6	94	100	0	100
St. George East	100	5	95	100	0	100	100	9	91	100	0	100
North Eastern	100	11	89	100	40	60	100	0	100	0	0	0
South Eastern	100	0	100	100	0	100	100	0	100	100	0	100
Caroni	100	4	96	100	0	100	100	5	95	0	0	0
Victoria	100	3	97	100	0	100	100	4	96	100	0	100
St. Patrick	100	4	96	100	0	100	100	7	93	100	0	100
Tobago	100	7	93	100	0	100	100	14	86	100	0	100

Chart 6. Percentage of Principals With/Without O'Level or C.X.C. Pass in Computer Science by Type of School



Only a small percentage of principals had acquired an O'Level pass in Computer Science as this is a relatively new subject.

Table 4. Number of Principals With/Without O'Level or C.X.C. Pass in Biology by Educational District and Type of School

Educational district	No. of principals with O'Level or C.X.C. pass in Biology by type of school											
	All schools			Government			Government assisted			Private		
	Total	Yes	No	Total	Yes	No	Total	Yes	No	Total	Yes	No
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)
All districts	213	54	159	57	13	44	134	32	102	22	9	13
P-o-S & Environs	35	9	26	10	2	8	18	5	13	7	2	5
St. George East	40	11	29	11	4	7	22	4	18	7	3	4
North Eastern	18	6	12	5	2	3	13	4	9	0	0	0
South Eastern	21	9	12	3	1	2	17	7	10	1	1	0
Caroni	27	6	21	8	2	6	19	4	15	0	0	0
Victoria	32	3	29	7	0	7	23	2	21	2	1	1
St. Patrick	25	5	20	8	1	7	15	4	11	2	0	2
Tobago	15	5	10	5	1	4	7	2	5	3	2	1

Chart 7. Percentage of Principals With/Without O'Level or C.X.C. Pass in Biology by Educational District

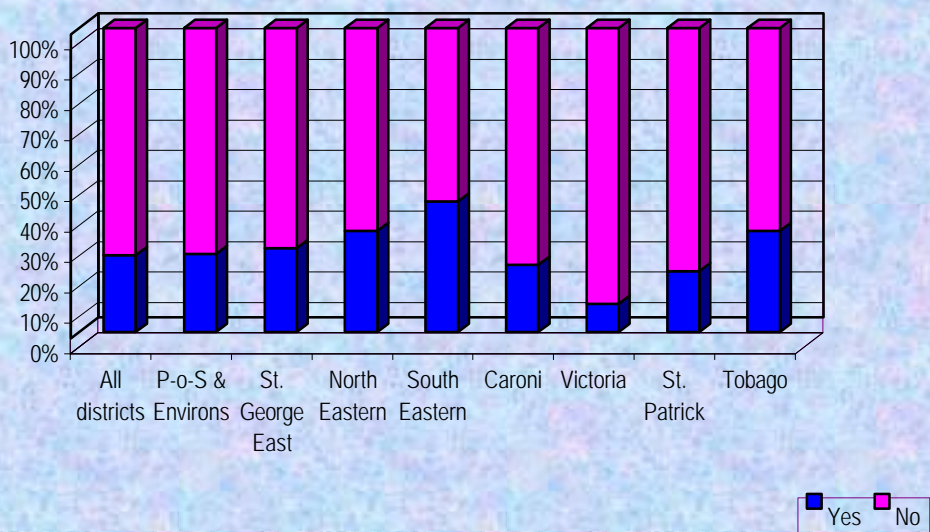
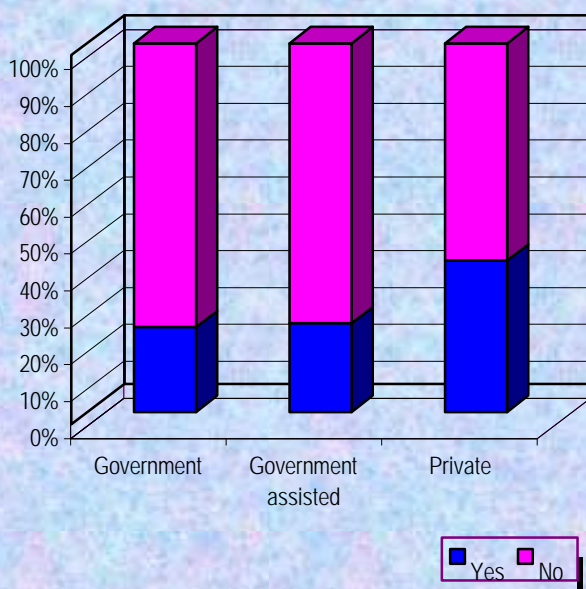


Table 4a. Percentage of Principals With/Without O'Level or C.X.C. Pass in Biology by Educational District and Type of School

Educational district	Percentage of principals with O'Level or C.X.C. pass in Biology by type of school											
	All schools			Government			Government assisted			Private		
	Total	Yes	No	Total	Yes	No	Total	Yes	No	Total	Yes	No
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)
All districts	100	25	75	100	23	77	100	24	76	100	41	59
P-o-S & Environs	100	26	74	100	20	80	100	28	72	100	29	71
St. George East	100	28	73	100	36	64	100	18	82	100	43	57
North Eastern	100	33	67	100	40	60	100	31	69	0	0	0
South Eastern	100	43	57	100	33	67	100	41	59	100	100	0
Caroni	100	22	78	100	25	75	100	21	79	0	0	0
Victoria	100	9	91	100	0	100	100	9	91	100	50	50
St. Patrick	100	20	80	100	13	88	100	27	73	100	0	100
Tobago	100	33	67	100	20	80	100	29	71	100	67	33

Chart 8. Percentage of Principals With/Without O'Level or C.X.C. Pass in Biology by Type of School



Twenty five percent (25%) of all principals had acquired an O'Level or C.X.C. pass in Biology (Table 4a). The acquisition rate (43%) was highest in the South Eastern educational district and in private primary schools (41%) by type of school.

Table 5. Number of Principals With/Without O'Level or C.X.C. Pass in Chemistry by Educational District and Type of School

Educational district	No. of principals with O'Level or C.X.C. pass in Chemistry by type of school											
	All schools			Government			Government assisted			Private		
	Total	Yes	No	Total	Yes	No	Total	Yes	No	Total	Yes	No
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)
All districts	213	28	185	57	5	52	134	18	116	22	5	17
P-o-S & Environs	35	3	32	10	2	8	18	1	17	7	0	7
St. George East	40	7	33	11	1	10	22	3	19	7	3	4
North Eastern	18	1	17	5	1	4	13	0	13	0	0	0
South Eastern	21	6	15	3	0	3	17	5	12	1	1	0
Caroni	27	2	25	8	0	8	19	2	17	0	0	0
Victoria	32	4	28	7	1	6	23	3	20	2	0	2
St. Patrick	25	3	22	8	0	8	15	3	12	2	0	2
Tobago	15	2	13	5	0	5	7	1	6	3	1	2

Chart 9. Percentage of Principals With/Without O'Level or C.X.C. Pass in Chemistry by Educational District

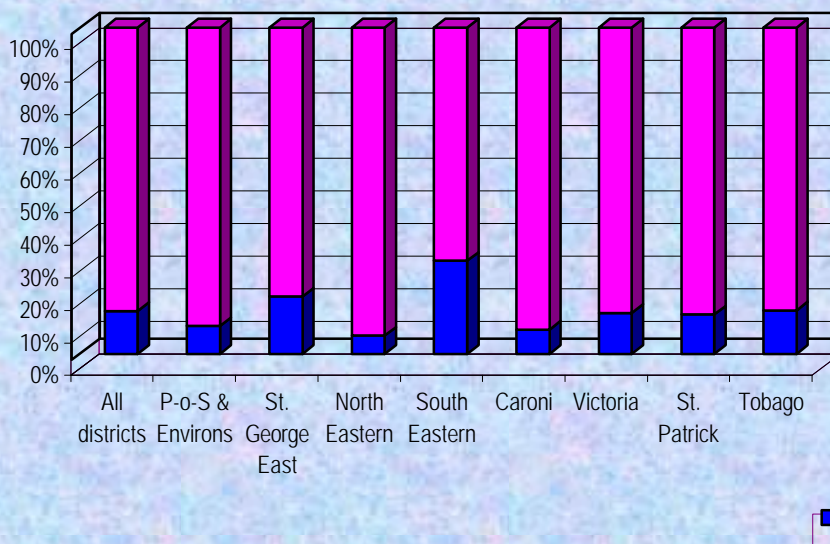
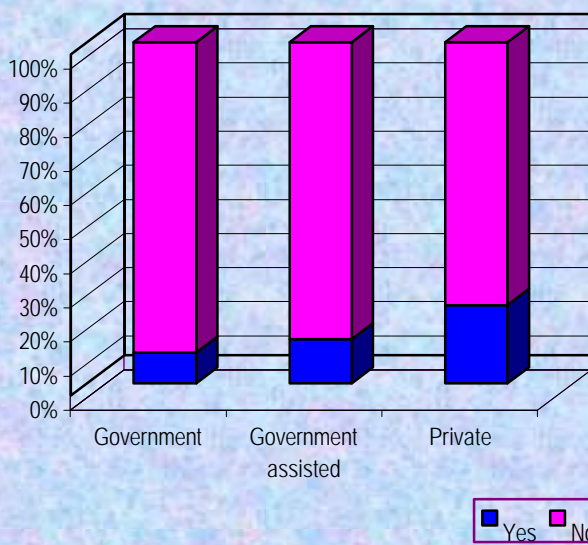


Table 5a. Percentage of Principals With/Without O'Level or C.X.C. Pass in Chemistry by Educational District and Type of School

Educational district	Percentage of principals with O'Level or C.X.C. pass in Chemistry by type of school											
	All schools			Government			Government assisted			Private		
	Total	Yes	No	Total	Yes	No	Total	Yes	No	Total	Yes	No
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)
All districts	100	13	87	100	9	91	100	13	87	100	23	77
P-o-S & Environs	100	9	91	100	20	80	100	6	94	100	0	100
St. George East	100	18	83	100	9	91	100	14	86	100	43	57
North Eastern	100	6	94	100	20	80	100	0	100	0	0	0
South Eastern	100	29	71	100	0	100	100	29	71	100	100	0
Caroni	100	7	93	100	0	100	100	11	89	0	0	0
Victoria	100	13	88	100	14	86	100	13	87	100	0	100
St. Patrick	100	12	88	100	0	100	100	20	80	100	0	100
Tobago	100	13	87	100	0	100	100	14	86	100	33	67

Chart 10. Percentage of Principals With/Without O'Level or C.X.C. Pass in Chemistry by Type of School



Overall 13% of principals had an O'Level or C.X.C. pass in Chemistry. However, there was a wide variation between types of school and educational districts. Among private schools this figure rose to 23% compared to 9% in government schools. The North Eastern district ranked the lowest with only 6% of principals having a pass in Chemistry whereas in the South Eastern district this figure was 29%.

Table 6. Number of Principals With/Without O'Level or C.X.C. Pass in Physics by Educational District and Type of School

Educational district	No. of principals with O'Level or C.X.C. pass in Physics by type of school											
	All schools			Government			Government assisted			Private		
	Total	Yes	No	Total	Yes	No	Total	Yes	No	Total	Yes	No
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)
All districts	213	12	201	57	4	53	134	6	128	22	2	20
P-o-S & Environs	35	3	32	10	2	8	18	1	17	7	0	7
St. George East	40	5	35	11	1	10	22	2	20	7	2	5
North Eastern	18	1	17	5	1	4	13	0	13	0	0	0
South Eastern	21	1	20	3	0	3	17	1	16	1	0	1
Caroni	27	2	25	8	0	8	19	2	17	0	0	0
Victoria	32	0	32	7	0	7	23	0	23	2	0	2
St. Patrick	25	0	25	8	0	8	15	0	15	2	0	2
Tobago	15	0	15	5	0	5	7	0	7	3	0	3

Chart 11. Percentage of Principals With/Without O'Level or C.X.C. Pass in Physics by Educational District

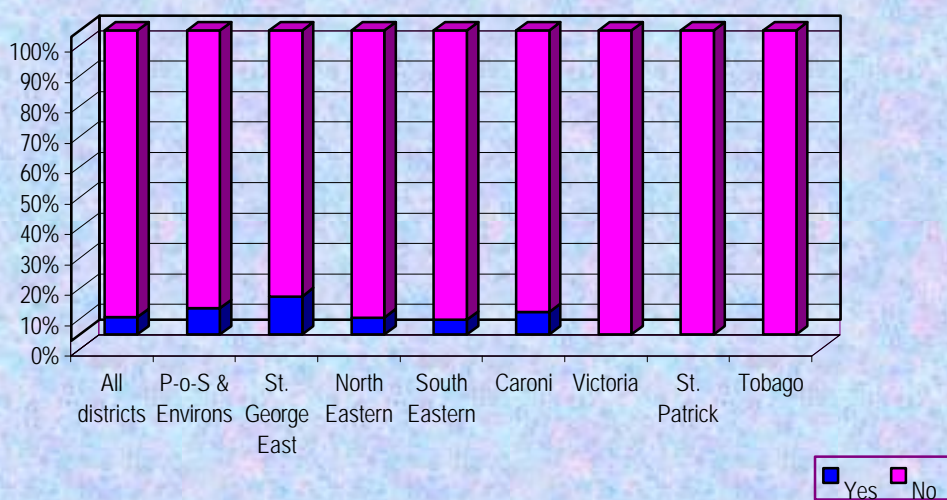
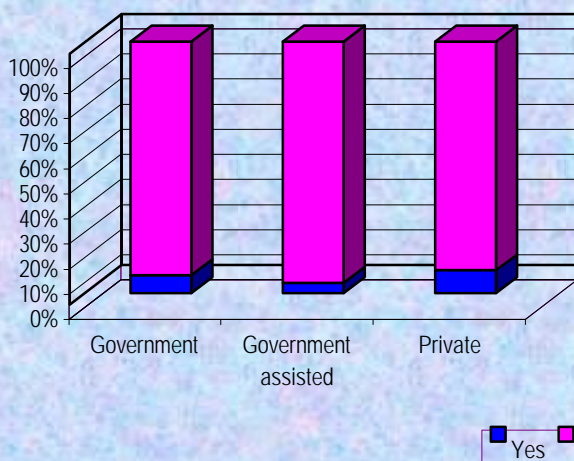


Table 6a. Percentage of Principals With/Without O'Level or C.X.C. Pass in Physics by Educational District and Type of School

Educational district	Percentage of principals with O'Level or C.X.C. pass in Physics by type of school											
	All schools			Government			Government assisted			Private		
	Total	Yes	No	Total	Yes	No	Total	Yes	No	Total	Yes	No
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)
All districts	100	6	94	100	7	93	100	4	96	100	9	91
P-o-S & Environs	100	9	91	100	20	80	100	6	94	100	0	100
St. George East	100	13	88	100	9	91	100	9	91	100	29	71
North Eastern	100	6	94	100	20	80	100	0	100	0	0	0
South Eastern	100	5	95	100	0	100	100	6	94	100	0	100
Caroni	100	7	93	100	0	100	100	11	89	0	0	0
Victoria	100	0	100	100	0	100	100	0	100	100	0	100
St. Patrick	100	0	100	100	0	100	100	0	100	100	0	100
Tobago	100	0	100	100	0	100	100	0	100	100	0	100

Chart 12. Percentage of Principals With/Without O'Level or C.X.C. Pass in Physics by Type of School



Amongst the science subjects Physics ranked the lowest. Only 6% of all principals had an O'Level or C.X.C. pass in this subject.

Table 7. Number of Principals With/Without O'Level or C.X.C. Pass in Integrated Science by Educational District and Type of School

Educational district	No. of principals with O'Level or C.X.C. pass in Integrated Science by type of school											
	All schools			Government			Government assisted			Private		
	Total	Yes	No	Total	Yes	No	Total	Yes	No	Total	Yes	No
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)
All districts	213	8	205	57	2	55	134	3	131	22	3	19
P-o-S & Environs	35	2	33	10	1	9	18	0	18	7	1	6
St. George East	40	2	38	11	0	11	22	2	20	7	0	7
North Eastern	18	0	18	5	0	5	13	0	13	0	0	0
South Eastern	21	0	21	3	0	3	17	0	17	1	0	1
Caroni	27	1	26	8	0	8	19	1	18	0	0	0
Victoria	32	1	31	7	0	7	23	0	23	2	1	1
St. Patrick	25	2	23	8	1	7	15	0	15	2	1	1
Tobago	15	0	15	5	0	5	7	0	7	3	0	3

Chart 13. Percentage of Principals With/Without O'Level or C.X.C. Pass in Integrated Science by Educational District

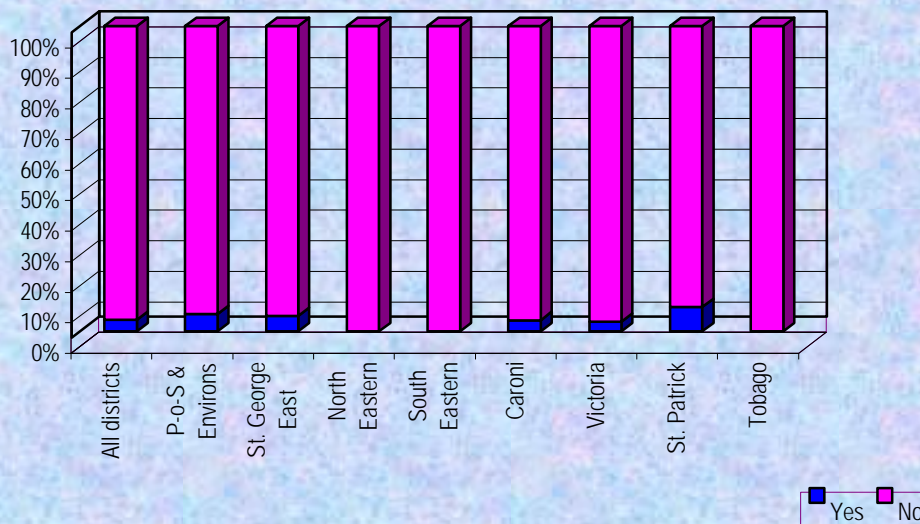
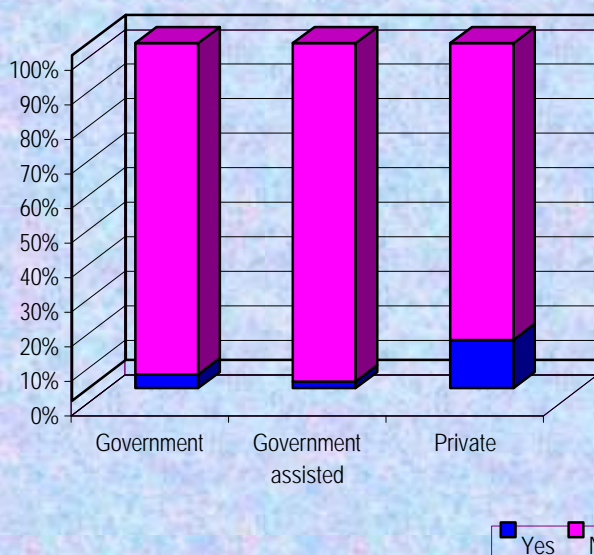


Table 7a. Percentage of Principals With/Without O'Level or C.X.C. Pass in Integrated Science by Educational District and Type of School

Educational district	Percentage of principals with O'Level or C.X.C. pass in Integrated Science by type of school											
	All schools			Government			Government assisted			Private		
	Total	Yes	No	Total	Yes	No	Total	Yes	No	Total	Yes	No
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)
All districts	100	4	96	100	4	96	100	2	98	100	14	86
P-o-S & Environs	100	6	94	100	10	90	100	0	100	100	14	86
St. George East	100	5	95	100	0	100	100	9	91	100	0	100
North Eastern	100	0	100	100	0	100	100	0	100	0	0	0
South Eastern	100	0	100	100	0	100	100	0	100	100	0	100
Caroni	100	4	96	100	0	100	100	5	95	0	0	0
Victoria	100	3	97	100	0	100	100	0	100	100	50	50
St. Patrick	100	8	92	100	13	88	100	0	100	100	50	50
Tobago	100	0	100	100	0	100	100	0	100	100	0	100

Chart 14. Percentage of Principals With/Without O'Level or C.X.C. Pass in Integrated Science by Type of School



Compared with Biology, Chemistry and Physics, Integrated science is a relatively new subject hence the low certification rate among principals.

Table 8. Number of Principals With/Without O'Level or C.X.C. Pass in Science* by Educational District and Type of School

Educational district	No. of principals with O'Level or C.X.C. pass in science by type of school											
	All schools			Government			Government assisted			Private		
	Total	Yes	No	Total	Yes	No	Total	Yes	No	Total	Yes	No
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)
All districts	213	72	141	57	19	38	134	42	92	22	11	11
P-o-S & Environs	35	13	22	10	4	6	18	6	12	7	3	4
St. George East	40	13	27	11	5	6	22	5	17	7	3	4
North Eastern	18	7	11	5	3	2	13	4	9	0	0	0
South Eastern	21	11	10	3	1	2	17	9	8	1	1	0
Caroni	27	7	20	8	2	6	19	5	14	0	0	0
Victoria	32	6	26	7	1	6	23	4	19	2	1	1
St. Patrick	25	10	15	8	2	6	15	7	8	2	1	1
Tobago	15	5	10	5	1	4	7	2	5	3	2	1

*Biology, Chemistry, Physics or Integrated Science

Chart 15. Percentage of Principals With/Without O'Level or C.X.C Pass in Science by Educational District

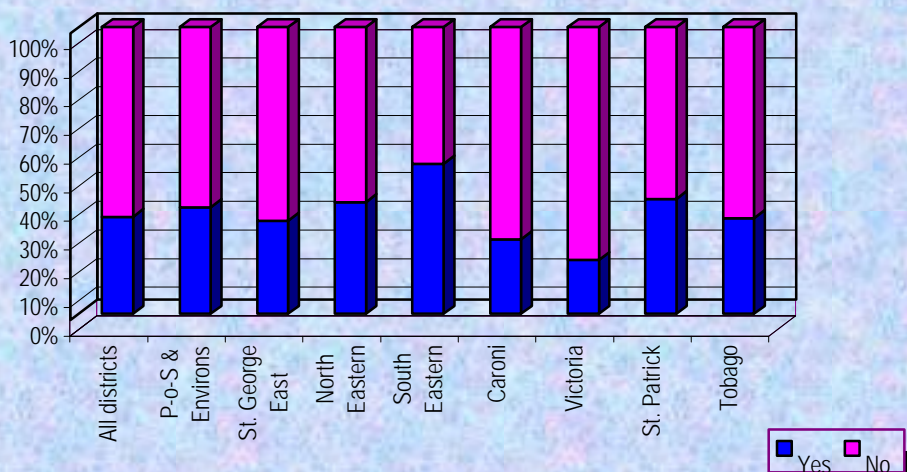


Table 8a. Percentage of Principals With/Without O'Level or C.X.C. Pass in Science by Educational District and Type of School

Educational district	Percentage of principals with O'Level or C.X.C. pass in science by type of school											
	All schools			Government			Government assisted			Private		
	Total	Yes	No	Total	Yes	No	Total	Yes	No	Total	Yes	No
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)
All districts	100	34	66	100	33	67	100	31	69	100	50	50
P-o-S & Environs	100	37	63	100	40	60	100	33	67	100	43	57
St. George East	100	33	68	100	45	55	100	23	77	100	43	57
North Eastern	100	39	61	100	60	40	100	31	69	0	0	0
South Eastern	100	52	48	100	33	67	100	53	47	100	100	0
Caroni	100	26	74	100	25	75	100	26	74	0	0	0
Victoria	100	19	81	100	14	86	100	17	83	100	50	50
St. Patrick	100	40	60	100	25	75	100	47	53	100	50	50
Tobago	100	33	67	100	20	80	100	29	71	100	67	33

Chart 16. Percentage of Principals With/Without O'Level or C.X.C. Pass in Science by Type of School

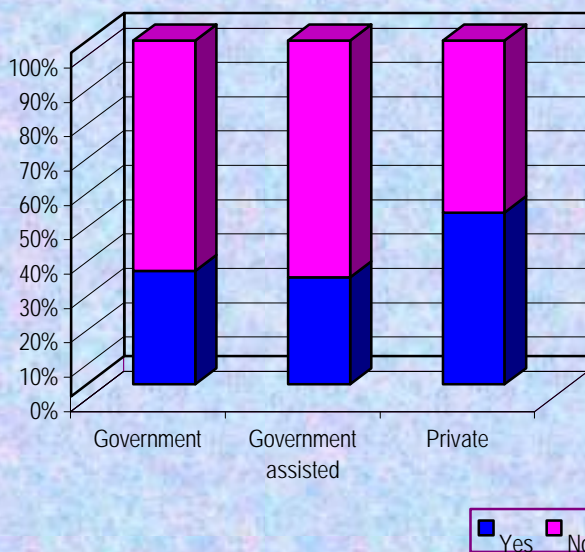


Table 8a shows that one third (34%) of the principals had obtained an O'Level or C.X.C. pass in at least one of the subjects, Biology, Chemistry, Physics or Integrated Science. In the South Eastern district this attainment was observed amongst 52% of the principals and similarly for 50% of the principals in private schools. The lowest achievement (19%) was reported in Victoria

Table 9. Number of Principals With/Without O'Level or C.X.C. Pass in Human and Social Biology by Educational District and Type of School

Educational district	No. of principals with O'Level or C.X.C. pass in Human and Social Biology by type of school											
	All schools			Government			Government assisted			Private		
	Total	Yes	No	Total	Yes	No	Total	Yes	No	Total	Yes	No
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)
All districts	213	71	142	57	21	36	134	40	94	22	10	12
P-o-S & Environs	35	10	25	10	1	9	18	6	12	7	3	4
St. George East	40	13	27	11	6	5	22	5	17	7	2	5
North Eastern	18	6	12	5	2	3	13	4	9	0	0	0
South Eastern	21	7	14	3	2	1	17	5	12	1	0	1
Caroni	27	8	19	8	1	7	19	7	12	0	0	0
Victoria	32	10	22	7	1	6	23	7	16	2	2	0
St. Patrick	25	10	15	8	4	4	15	4	11	2	2	0
Tobago	15	7	8	5	4	1	7	2	5	3	1	2

Chart 17. Percentage of Principals With/Without O'Level or C.X.C. Pass in Human and Social Biology by Educational District

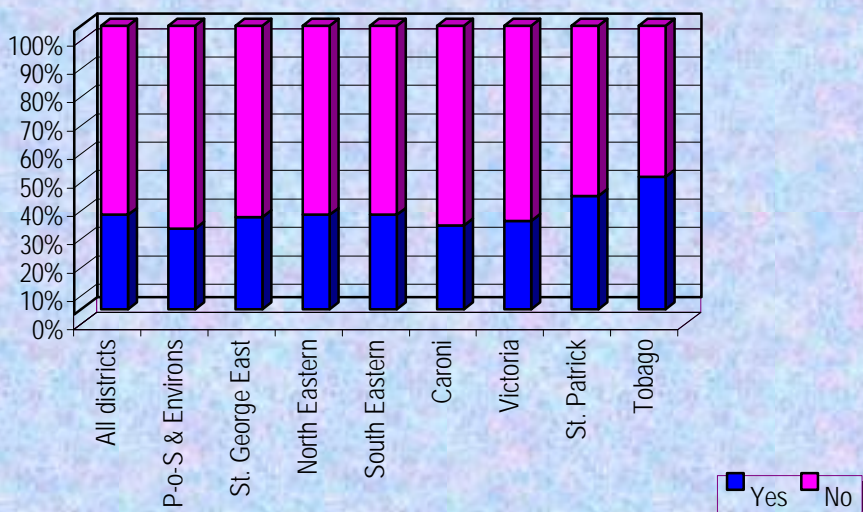
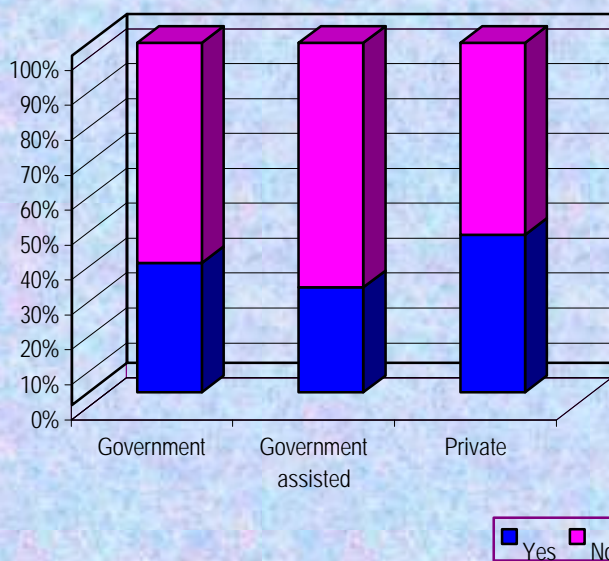


Table 9a. Percentage of Principals With/Without O'Level or C.X.C. Pass in Human and Social Biology by Educational District and Type of School

Educational district	Percentage of principals with O'Level or C.X.C. pass in Human and Social Biology by type of school											
	All schools			Government			Government assisted			Private		
	Total	Yes	No	Total	Yes	No	Total	Yes	No	Total	Yes	No
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)
All districts	100	33	67	100	37	63	100	30	70	100	45	55
P-o-S & Environs	100	29	71	100	10	90	100	33	67	100	43	57
St. George East	100	33	68	100	55	45	100	23	77	100	29	71
North Eastern	100	33	67	100	40	60	100	31	69	0	0	0
South Eastern	100	33	67	100	67	33	100	29	71	100	0	100
Caroni	100	30	70	100	13	88	100	37	63	0	0	0
Victoria	100	31	69	100	14	86	100	30	70	100	100	0
St. Patrick	100	40	60	100	50	50	100	27	73	100	100	0
Tobago	100	47	53	100	80	20	100	29	71	100	33	67

Chart 18. Percentage of Principals With/Without O'Level or C.X.C. Pass in Human & Social Biology by Type of School



One third (33%) of all principals had obtained an O'Level or C.X.C. pass in Human and Social Biology. By district, principals in Tobago reported the highest rate of 47% and similarly by type of school principals in private primary schools (45%).

Table 10. Number of Principals With/Without A' Level Passes in Mathematics, Computer Science, Biology, Chemistry and Physics by Type of School

Type of school	Total	No. of principals with A' Level passes by subject									
		Mathematics		Computer Science		Biology		Chemistry		Physics	
		Yes	No	Yes	No	Yes	No	Yes	No	Yes	No
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)
All schools	213	8	205	1	212	7	206	6	207	5	208
Government	57	2	55	1	56	1	56	1	56	2	55
Government assisted	134	2	132	0	134	2	132	1	133	1	133
Private	22	4	18	0	22	4	18	4	18	2	20

Chart 19. Percentage of Principals With/Without A' Level Passes in Mathematics, Computer Science, Biology, Chemistry and Physics All Schools

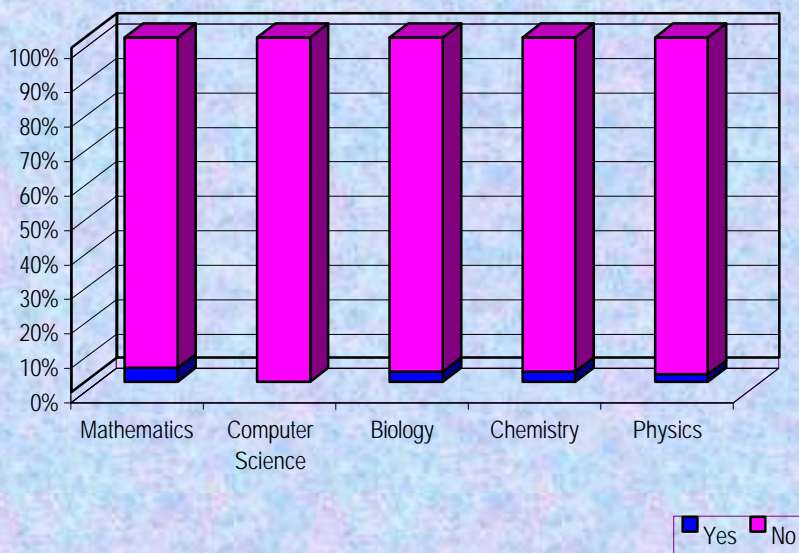


Table 10a. Percentage of Principals With/Without A' Level Passes in Mathematics, Computer Science, Biology, Chemistry and Physics by Type of School

Type of school	Total	Percentage of principals with A' Level passes by subject									
		Mathematics		Computer Science		Biology		Chemistry		Physics	
		Yes	No	Yes	No	Yes	No	Yes	No	Yes	No
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)
All schools	100	4	96	0	100	3	97	3	97	2	98
Government	100	4	96	2	98	2	98	2	98	4	96
Government assisted	100	1	99	0	100	1	99	1	99	1	99
Private	100	18	82	0	100	18	82	18	82	9	91

A relatively small percentage of primary school principals had obtained A'Level passes in Mathematics, Computer Science and natural sciences.

**Table 11. Number of Principals with Tertiary Qualification by Type of School
Non-professional**

Type of school	Total	No. of principals with tertiary qualification, non-professional			
		Degree	Associate degree	Diploma	None
	(1)	(2)	(3)	(4)	(5)
All schools	213	6	5	21	181
Government	57	2	1	7	47
Government assisted	134	3	2	13	116
Private	22	1	2	1	18

**Table 11a. Percentage of Principals with Tertiary Qualification by Type of School
Non-professional**

Type of school	Total	Percentage of principals with tertiary qualification, non-professional			
		Degree	Associate degree	Diploma	None
	(1)	(2)	(3)	(4)	(5)
All schools	100	3	2	10	85
Government	100	4	2	12	82
Government assisted	100	2	1	10	87
Private	100	5	9	5	82

**Chart 20. Percentage of Principals with Tertiary Qualification by Type of School
non-professional**

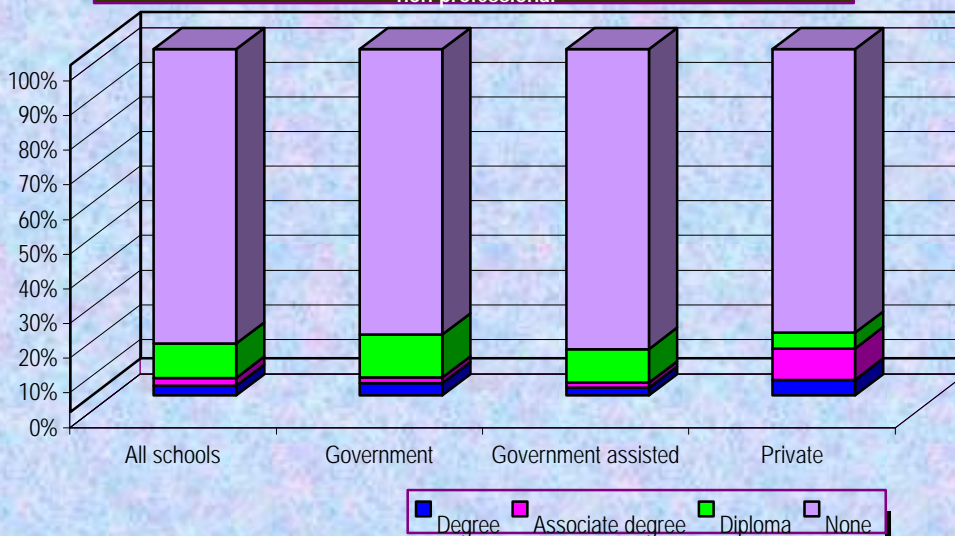


Table 12. Number of Principals by Highest Level of Professional Training, Educational District and Type of School

Educational district	Type of school	Total	No. of principals by highest level of professional training					
			None	Teacher's Diploma	Certificate in Education	Diploma in Education	B.Ed.	M.Ed./Ph.D.
		(1)	(2)	(3)	(4)	(5)	(6)	(7)
All districts	All schools	213	1	134	18	6	42	12
	Government	57	0	35	5	1	14	2
	Government assisted	134	0	90	10	1	28	5
	Private	22	1	9	3	4	0	5
P-o-S & Environs	Total	35	1	19	4	2	6	3
	Government	10	0	8	1	0	1	0
	Government assisted	18	0	10	2	0	5	1
	Private	7	1	1	1	2	0	2
St. George East	Total	40	0	21	4	1	10	4
	Government	11	0	4	1	0	5	1
	Government assisted	22	0	14	2	0	5	1
	Private	7	0	3	1	1	0	2
North Eastern	Total	18	0	12	2	0	3	1
	Government	5	0	2	1	0	1	1
	Government assisted	13	0	10	1	0	2	0
	Private	0	0	0	0	0	0	0
South Eastern	Total	21	0	11	2	1	6	1
	Government	3	0	3	0	0	0	0
	Government assisted	17	0	7	2	1	6	1
	Private	1	0	1	0	0	0	0
Caroni	Total	27	0	16	3	1	6	1
	Government	8	0	3	2	1	2	0
	Government assisted	19	0	13	1	0	4	1
	Private	0	0	0	0	0	0	0
Victoria	Total	32	0	27	0	1	4	0
	Government	7	0	6	0	0	1	0
	Government assisted	23	0	20	0	0	3	0
	Private	2	0	1	0	1	0	0
St. Patrick	Total	25	0	21	2	0	2	0
	Government	8	0	7	0	0	1	0
	Government assisted	15	0	12	2	0	1	0
	Private	2	0	2	0	0	0	0
Tobago	Total	15	0	7	1	0	5	2
	Government	5	0	2	0	0	3	0
	Government assisted	7	0	4	0	0	2	1
	Private	3	0	1	1	0	0	1

Table 12a. Percentage of Principals by Highest Level of Professional Training, Educational District and Type of School

Educational district	Type of school	Total	Percentage of principals by highest level of professional training					
			None	Teacher's Diploma	Certificate in Education	Diploma in Education	B.Ed.	M.Ed./Ph.D.
		(1)	(2)	(3)	(4)	(5)	(6)	(7)
All districts	All schools	100	0	63	8	3	20	6
	Government	100	0	61	9	2	25	4
	Government assisted	100	0	67	7	1	21	4
	Private	100	5	41	14	18	0	23
P-o-S & Environs	Total	100	3	54	11	6	17	9
	Government	100	0	80	10	0	10	0
	Government assisted	100	0	56	11	0	28	6
	Private	100	14	14	14	29	0	29
St. George East	Total	100	0	53	10	3	25	10
	Government	100	0	36	9	0	45	9
	Government assisted	100	0	64	9	0	23	5
	Private	100	0	43	14	14	0	29
North Eastern	Total	100	0	67	11	0	17	6
	Government	100	0	40	20	0	20	20
	Government assisted	100	0	77	8	0	15	0
	Private	0	0	0	0	0	0	0
South Eastern	Total	100	0	52	10	5	29	5
	Government	100	0	100	0	0	0	0
	Government assisted	100	0	41	12	6	35	6
	Private	100	0	100	0	0	0	0
Caroni	Total	100	0	59	11	4	22	4
	Government	100	0	38	25	13	25	0
	Government assisted	100	0	68	5	0	21	5
	Private	0	0	0	0	0	0	0
Victoria	Total	100	0	84	0	3	13	0
	Government	100	0	86	0	0	14	0
	Government assisted	100	0	87	0	0	13	0
	Private	100	0	50	0	50	0	0
St. Patrick	Total	100	0	84	8	0	8	0
	Government	100	0	88	0	0	13	0
	Government assisted	100	0	80	13	0	7	0
	Private	100	0	100	0	0	0	0
Tobago	Total	100	0	47	7	0	33	13
	Government	100	0	40	0	0	60	0
	Government assisted	100	0	57	0	0	29	14
	Private	100	0	33	33	0	0	33

As a pre-requisite for the position, all principals in the government and government assisted primary schools had professional qualification as shown in Table 12a. Sixty three percent (63%) of all principals had acquired the Teacher's Diploma and 20% the B.Ed. degree as their highest level of professional qualification.

Chart 21. Percentage of Principals by Highest Level of Professional Training and Educational District

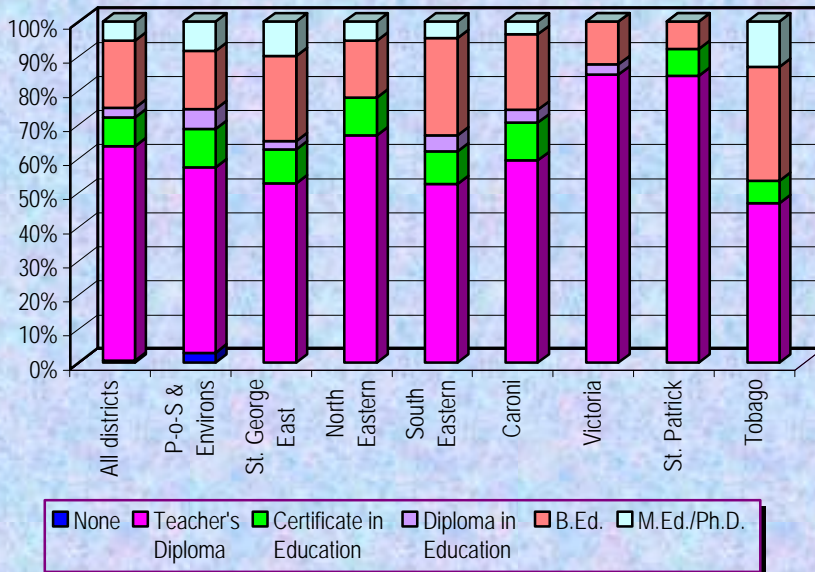


Chart 22. Percentage of Principals by Highest Level of Professional Training and Type of School

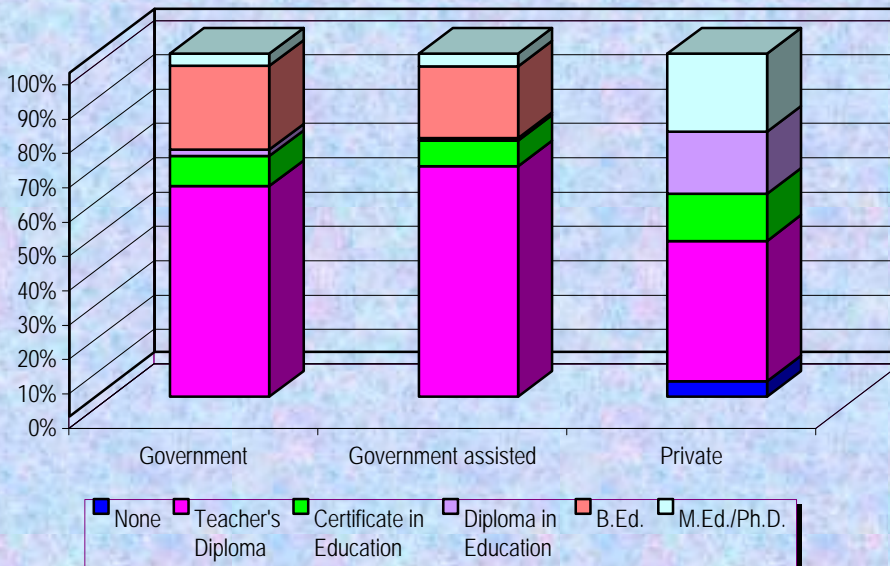


Table 13. Number of Principals With/Without Administrative Training by Educational District and Type of School

Educational district	No. of principals with administrative training by type of school											
	All schools			Government			Government assisted			Private		
	Total	Yes	No	Total	Yes	No	Total	Yes	No	Total	Yes	No
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)
All districts	213	111	102	57	34	23	134	66	68	22	11	11
P-o-S & Environs	35	21	14	10	5	5	18	13	5	7	3	4
St. George East	40	21	19	11	8	3	22	9	13	7	4	3
North Eastern	18	7	11	5	3	2	13	4	9	0	0	0
South Eastern	21	11	10	3	1	2	17	10	7	1	0	1
Caroni	27	17	10	8	6	2	19	11	8	0	0	0
Victoria	32	18	14	7	5	2	23	11	12	2	2	0
St. Patrick	25	12	13	8	4	4	15	6	9	2	2	0
Tobago	15	4	11	5	2	3	7	2	5	3	0	3

Chart 23. Percentage of Principals With/Without Administrative Training by Educational District

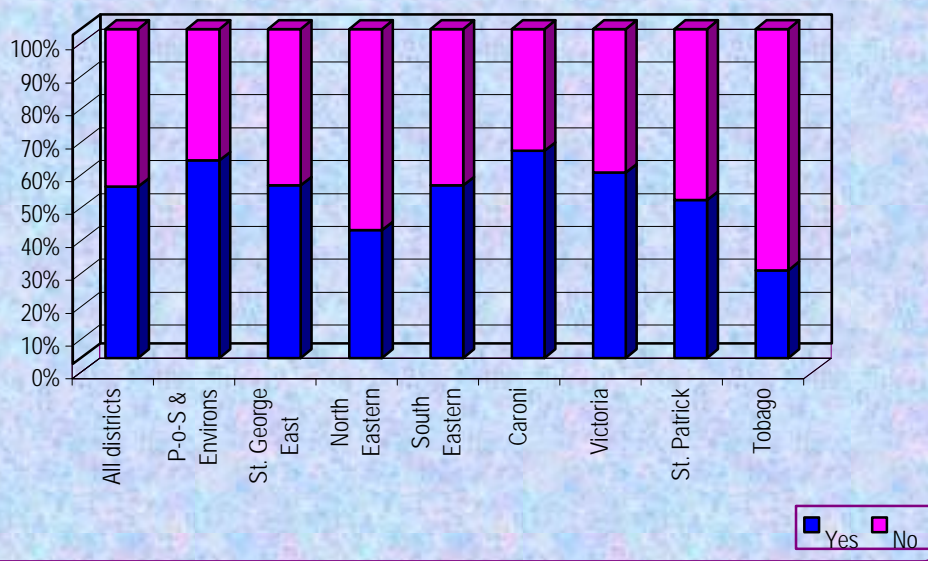
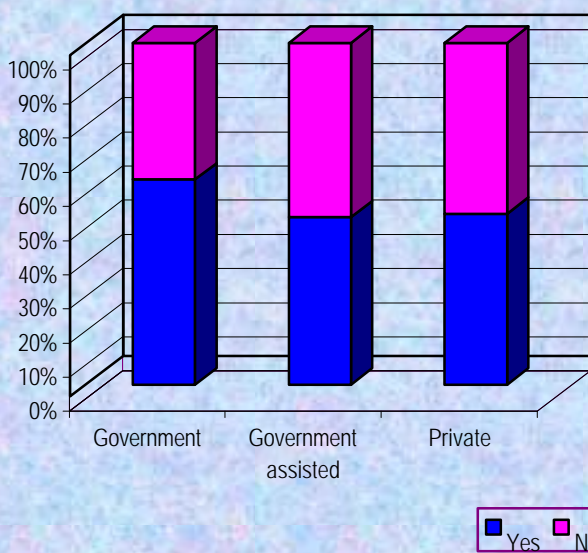


Table 13a. Percentage of Principals With/Without Administrative Training by Educational District and Type of School

Educational district	Percentage of principals with administrative training by type of school											
	All schools			Government			Government assisted			Private		
	Total	Yes	No	Total	Yes	No	Total	Yes	No	Total	Yes	No
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)
All districts	100	52	48	100	60	40	100	49	51	100	50	50
P-o-S & Environs	100	60	40	100	50	50	100	72	28	100	43	57
St. George East	100	53	48	100	73	27	100	41	59	100	57	43
North Eastern	100	39	61	100	60	40	100	31	69	0	0	0
South Eastern	100	52	48	100	33	67	100	59	41	100	0	100
Caroni	100	63	37	100	75	25	100	58	42	0	0	0
Victoria	100	56	44	100	71	29	100	48	52	100	100	0
St. Patrick	100	48	52	100	50	50	100	40	60	100	100	0
Tobago	100	27	73	100	40	60	100	29	71	100	0	100

Chart 24. Percentage of Principals With/Without Administrative Training by Type of School



One half (52%) of all principals had administrative training. By district, however, approximately two fifths (39%) of the principals in the North Eastern educational district and one quarter (27%) of the principals in the Tobago had received administrative training. .

Table 14. Number of Primary Schools With/Without Science Room by Educational District and Type of School

Educational district	No. of schools with science room by type of school											
	All schools			Government			Government assisted			Private		
	Total	Yes	No	Total	Yes	No	Total	Yes	No	Total	Yes	No
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)
All districts	213	54	159	57	17	40	134	26	108	22	11	11
P-o-S & Environs	35	12	23	10	1	9	18	6	12	7	5	2
St. George East	40	13	27	11	6	5	22	4	18	7	3	4
North Eastern	18	2	16	5	1	4	13	1	12	0	0	0
South Eastern	21	7	14	3	1	2	17	5	12	1	1	0
Caroni	27	7	20	8	5	3	19	2	17	0	0	0
Victoria	32	8	24	7	1	6	23	6	17	2	1	1
St. Patrick	25	1	24	8	0	8	15	1	14	2	0	2
Tobago	15	4	11	5	2	3	7	1	6	3	1	2

Chart 25. Percentage of Primary Schools With/Without Science Room by Educational District

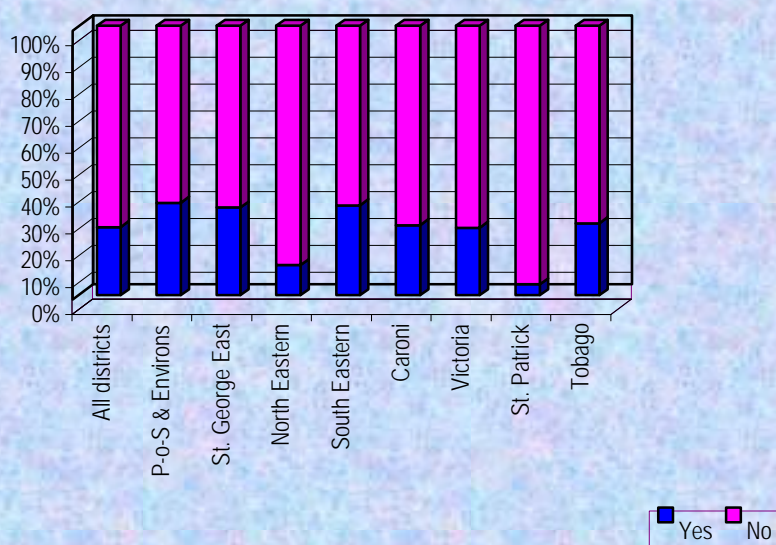
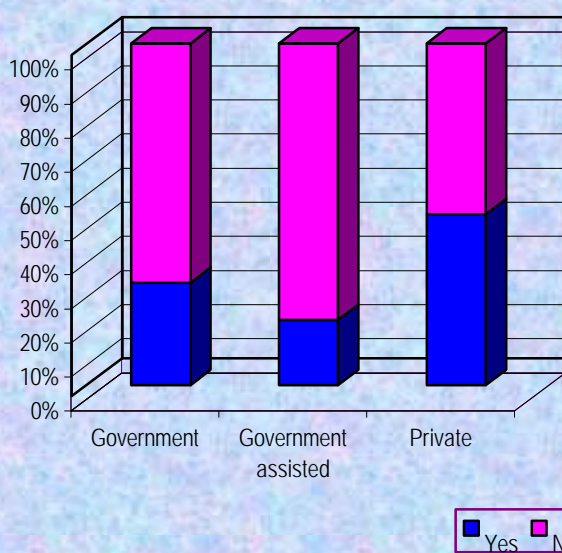


Table 14a. Percentage of Primary Schools With/Without Science Room by Educational District and Type of School

Educational district	Percentage of schools with science room by type of school											
	All schools			Government			Government assisted			Private		
	Total	Yes	No	Total	Yes	No	Total	Yes	No	Total	Yes	No
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)
All districts	100	25	75	100	30	70	100	19	81	100	50	50
P-o-S & Environs	100	34	66	100	10	90	100	33	67	100	71	29
St. George East	100	33	68	100	55	45	100	18	82	100	43	57
North Eastern	100	11	89	100	20	80	100	8	92	0	0	0
South Eastern	100	33	67	100	33	67	100	29	71	100	100	0
Caroni	100	26	74	100	63	38	100	11	89	0	0	0
Victoria	100	25	75	100	14	86	100	26	74	100	50	50
St. Patrick	100	4	96	100	0	100	100	7	93	100	0	100
Tobago	100	27	73	100	40	60	100	14	86	100	33	67

Chart 26. Percentage of Primary Schools With/Without Science Room by Type of School



Only 25% of the sample of primary schools had science rooms (Table 14a). By educational district, the figure ranged from as low as 4% in St. Patrick to 34% in the schools in P-o-S and Environs. A relatively larger percentage (50%) of science rooms was reported in private schools compared with 30% in government and 19% in government assisted schools. Amongst the state funded institutions, the government schools in Caroni (63%) and St. George East (55%) had the largest proportion of science rooms. In these two educational districts there were probably newer schools.

Table 15. Number of Primary Schools With/Without Well Equipped Science Rooms by Educational District and Type of School

Educational district	Type of school	Total	No. of schools with well equipped science rooms			
			Yes	No	Not stated	Not applicable
		(1)	(2)	(3)	(4)	(5)
All districts	All schools	213	9	42	3	159
	Government	57	2	15	0	40
	Government assisted	134	3	21	2	108
	Private	22	4	6	1	11
P-0-S & Environs	Total	35	4	7	1	23
	Government	10	0	1	0	9
	Government assisted	18	1	4	1	12
	Private	7	3	2	0	2
St. George East	Total	40	3	10	0	27
	Government	11	1	5	0	5
	Government assisted	22	1	3	0	18
	Private	7	1	2	0	4
North Eastern	Total	18	0	2	0	16
	Government	5	0	1	0	4
	Government assisted	13	0	1	0	12
	Private	0	0	0	0	0
South Eastern	Total	21	1	6	0	14
	Government	3	0	1	0	2
	Government assisted	17	1	4	0	12
	Private	1	0	1	0	0
Caroni	Total	27	0	7	0	20
	Government	8	0	5	0	3
	Government assisted	19	0	2	0	17
	Private	0	0	0	0	0
Victoria	Total	32	0	7	1	24
	Government	7	0	1	0	6
	Government assisted	23	0	5	1	17
	Private	2	0	1	0	1
St. Patrick	Total	25	0	1	0	24
	Government	8	0	0	0	8
	Government assisted	15	0	1	0	14
	Private	2	0	0	0	2
Tobago	Total	15	1	2	1	11
	Government	5	1	1	0	3
	Government assisted	7	0	1	0	6
	Private	3	0	0	1	2

Table 15a. Percentage of Primary Schools With/Without Well Equipped Science Rooms by Educational District and Type of School

Educational district	Type of School	Total	Percentage of schools with well equipped science rooms			
			Yes	No	Not stated	Not applicable
		(1)	(2)	(3)	(4)	(5)
All districts	All schools	100	4	20	1	75
	Government	100	4	26	0	70
	Government assisted	100	2	16	1	81
	Private	100	18	27	5	50
P-o-S & Environs	Total	100	11	20	3	66
	Government	100	0	10	0	90
	Government assisted	100	6	22	6	67
	Private	100	43	29	0	29
St. George East	Total	100	8	25	0	68
	Government	100	9	45	0	45
	Government assisted	100	5	14	0	82
	Private	100	14	29	0	57
North Eastern	Total	100	0	11	0	89
	Government	100	0	20	0	80
	Government assisted	100	0	8	0	92
	Private	0	0	0	0	0
South Eastern	Total	100	5	29	0	67
	Government	100	0	33	0	67
	Government assisted	100	6	24	0	71
	Private	100	0	100	0	0
Caroni	Total	100	0	26	0	74
	Government	100	0	63	0	38
	Government assisted	100	0	11	0	89
	Private	0	0	0	0	0
Victoria	Total	100	0	22	3	75
	Government	100	0	14	0	86
	Government assisted	100	0	22	4	74
	Private	100	0	50	0	50
St. Patrick	Total	100	0	4	0	96
	Government	100	0	0	0	100
	Government assisted	100	0	7	0	93
	Private	100	0	0	0	100
Tobago	Total	100	7	13	7	73
	Government	100	20	20	0	60
	Government assisted	100	0	14	0	86
	Private	100	0	0	33	67

A negligible 4% of all primary schools stated that their science rooms were well equipped. Private schools in P-o-S and Environs had the largest proportion (43%) of well equipped science rooms. Equipment included magnets, thermometers, measuring cylinders, beakers, funnels and shapes.

Chart 27. Percentage of Primary Schools With/Without Well Equipped Science Rooms by Educational District

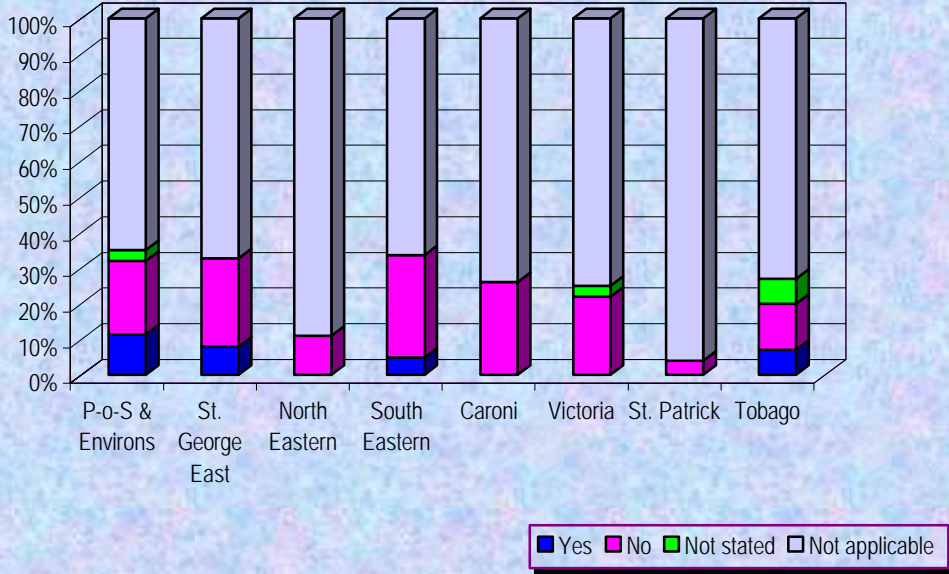


Table 16. Number of Primary Schools With/Without Adequate Science Materials by Educational District and Type of School

Educational district	No. of schools with adequate science materials by type of school															
	All schools				Government				Government assisted				Private			
	Total	Yes	No	Not stated	Total	Yes	No	Not stated	Total	Yes	No	Not stated	Total	Yes	No	Not stated
(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)	(13)	(14)	(15)	(16)	
All districts	213	21	187	5	57	8	47	2	134	8	124	2	22	5	16	1
P-o-S & Environs	35	5	28	2	10	1	8	1	18	1	16	1	7	3	4	0
St. George East	40	6	32	2	11	3	7	1	22	2	20	0	7	1	5	1
North Eastern	18	1	17	0	5	1	4	0	13	0	13	0	0	0	0	0
South Eastern	21	6	15	0	3	1	2	0	17	4	13	0	1	1	0	0
Caroni	27	2	24	1	8	1	7	0	19	1	17	1	0	0	0	0
Victoria	32	1	31	0	7	1	6	0	23	0	23	0	2	0	2	0
St. Patrick	25	0	25	0	8	0	8	0	15	0	15	0	2	0	2	0
Tobago	15	0	15	0	5	0	5	0	7	0	7	0	3	0	3	0

Chart 28. Percentage of Primary Schools With/Without Adequate Science Materials by Educational District

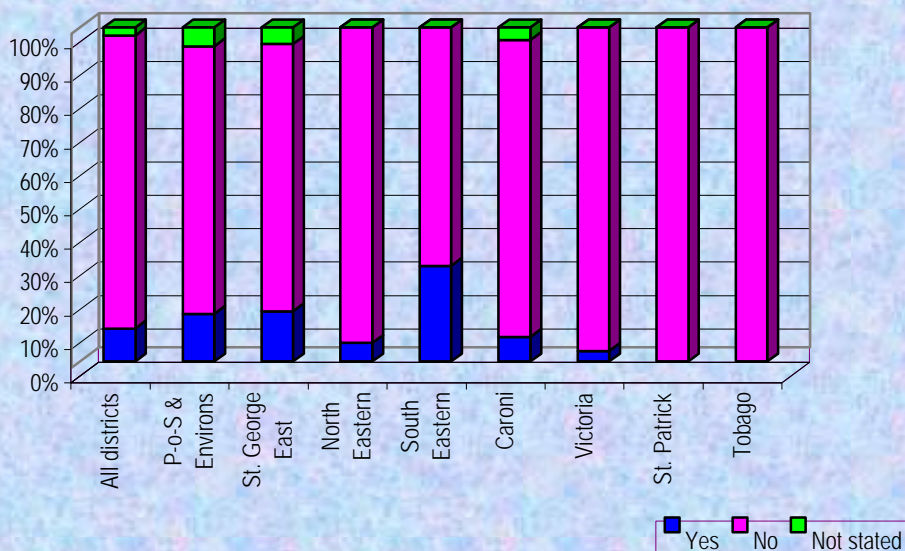


Table 16a. Percentage of Primary Schools With/Without Adequate Science Materials by Educational District and Type of School

Educational district	Percentage of schools with adequate science materials															
	All schools				Government				Government assisted				Private			
	Total	Yes	No	Not stated	Total	Yes	No	Not stated	Total	Yes	No	Not stated	Total	Yes	No	Not stated
(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)	(13)	(14)	(15)	(16)	
All districts	100	10	88	2	100	14	82	4	100	6	93	1	100	23	73	5
P-o-S & Environs	100	14	80	6	100	10	80	10	100	6	89	6	100	43	57	0
St. George East	100	15	80	5	100	27	64	9	100	9	91	0	100	14	71	14
North Eastern	100	6	94	0	100	20	80	0	100	0	100	0	0	0	0	0
South Eastern	100	29	71	0	100	33	67	0	100	24	76	0	100	100	0	0
Caroni	100	7	89	4	100	13	88	0	100	5	89	5	0	0	0	0
Victoria	100	3	97	0	100	14	86	0	100	0	100	0	100	0	100	0
St. Patrick	100	0	100	0	100	0	100	0	100	0	100	0	100	0	100	0
Tobago	100	0	100	0	100	0	100	0	100	0	100	0	100	0	100	0

Table 16a above shows that most schools, over 70% by educational district, experienced an inadequate supply of science materials such as filter paper and charts. By type of institution, 23% of private schools were adequately provided with science materials compared with 14% in government and 6% in government assisted schools.

Table 17. Number of Primary Schools With/Without Science Room by Enrolment

Enrolment	Total	No. of schools with science rooms	
		Yes	No
	(1)	(2)	(3)
All schools	213	54	159
Less than 100 students	45	5	40
100 - 199 "	55	13	42
200 - 299 "	43	10	33
300 - 399 "	22	4	18
400 - 499 "	19	7	12
500 and over "	29	15	14

Table 17a. Percentage of Primary Schools With/Without Science Room by Enrolment

Enrolment	Total	Percentage of schools with science rooms	
		Yes	No
	(1)	(2)	(3)
All schools	100	25	75
Less than 100 students	100	11	89
100 - 199 "	100	24	76
200 - 299 "	100	23	77
300 - 399 "	100	18	82
400 - 499 "	100	37	63
500 and over "	100	52	48

By enrolment size, only 11% of the primary schools with 100 and less students had science rooms compared with 52% of the schools with 500 and more students (Table 17a).

Chart 29. Percentage of Primary Schools With/Without Science Rooms by Enrolment

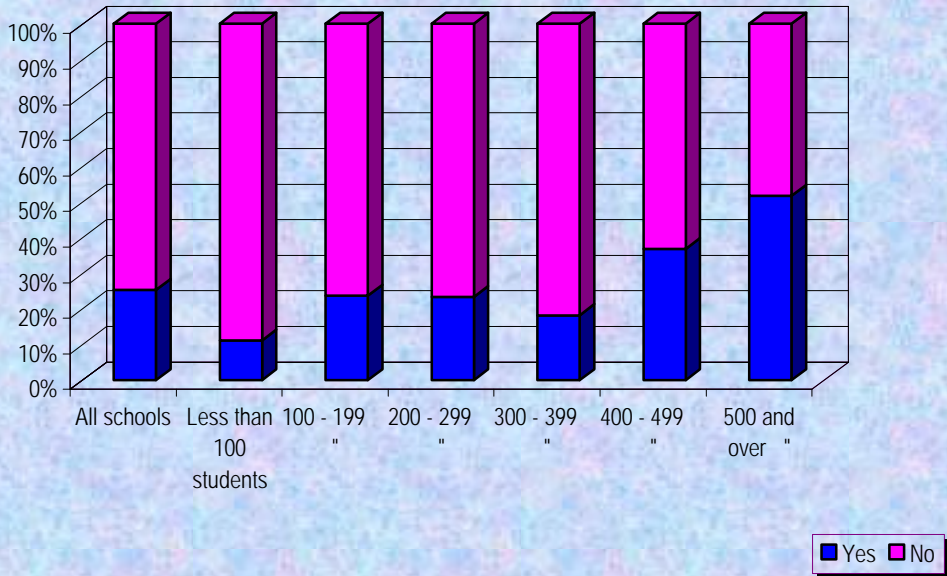


Table 18. Number of Primary Schools With/Without Well Equipped Science Rooms by Enrolment

Enrolment	Total	No. of schools with well equipped science rooms			
		Yes	No	Not stated	Not applicable
	(1)	(2)	(3)	(4)	(5)
All schools	213	9	42	3	159
Less than 100 students	45	0	4	1	40
100 - 199 "	55	1	11	1	42
200 - 299 "	43	1	9	0	33
300 - 399 "	22	1	3	0	18
400 - 499 "	19	3	3	1	12
500 and over "	29	3	12	0	14

Table 18a. Percentage of Primary Schools With/Without Well Equipped Science Rooms by Enrolment

Enrolment	Total	Percentage of schools with well equipped science rooms			
		Yes	No	Not stated	Not applicable
	(1)	(2)	(3)	(4)	(5)
All schools	100	4	20	1	75
Less than 100 students	100	0	9	2	89
100 - 199 "	100	2	20	2	76
200 - 299 "	100	2	21	0	77
300 - 399 "	100	5	14	0	82
400 - 499 "	100	16	16	5	63
500 and over "	100	10	41	0	48

Chart 30. Percentage of Schools with Well Equipped Science Rooms by Enrolment

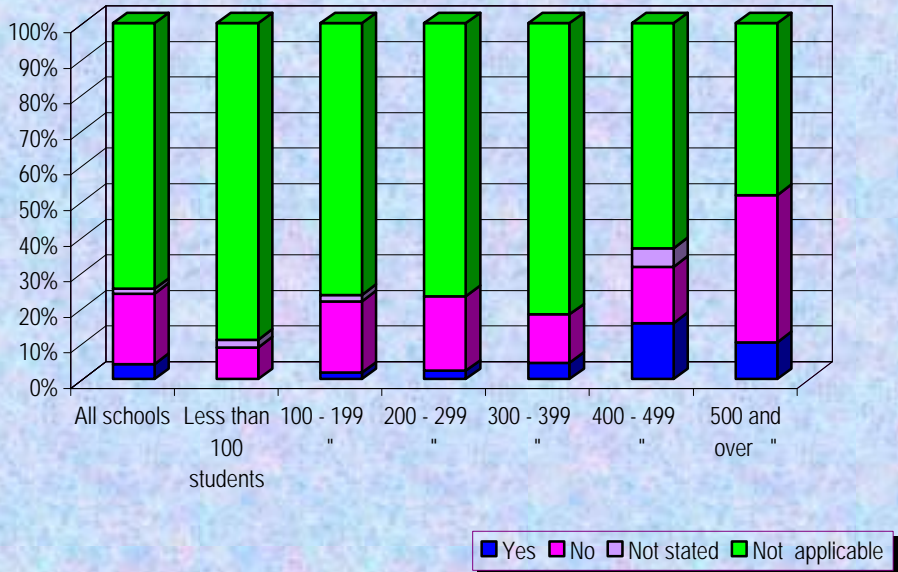


Table 19. Number of Primary Schools With/Without Adequate Science Materials by Enrolment

Enrolment	Total	No. of schools with adequate science materials		
		Yes	No	Not stated
	(1)	(2)	(3)	(4)
All schools	213	21	187	5
Less than 100 students	45	6	38	1
100 - 199 "	55	0	52	3
200 - 299 "	43	4	39	0
300 - 399 "	22	3	19	0
400 - 499 "	19	4	15	0
500 and over "	29	4	24	1

Table 19a. Percentage of Primary Schools With/Without Adequate Science Materials by Enrolment

Enrolment	Total	Percentage of schools with adequate science materials		
		Yes	No	Not stated
	(1)	(2)	(3)	(4)
All schools	100	10	88	2
Less than 100 students	100	13	84	2
100 - 199 "	100	0	95	5
200 - 299 "	100	9	91	0
300 - 399 "	100	14	86	0
400 - 499 "	100	21	79	0
500 and over "	100	14	83	3

An inadequate supply of science materials was reported by primary schools of varying student population as shown in Table 19a above.

Chart 31. Percentage of Schools with Adequate Science Materials by Enrolment

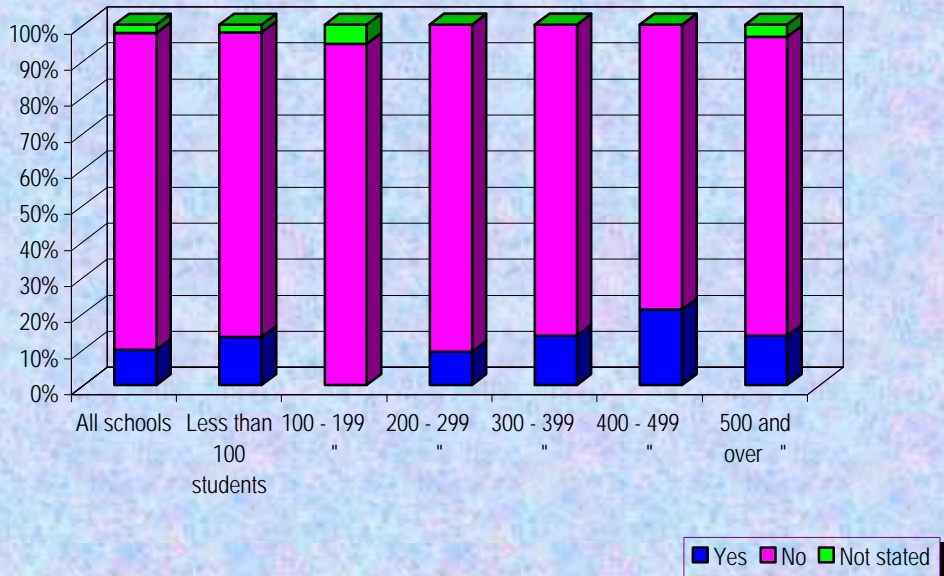


Table 20. Distribution of Computers by Educational District and Type of School

Educational district	Type of school	Total no. schools	Enrolment	No. of computers	No. of schools With		Mean no.	
					Computers	Internet access	Computers/school	Students/computer
		(1)	(2)	(3)	(4)	(5)	(6)	(7)
All districts	All schools	213	56160	1127	195	28	5	50
	Government	57	16778	318	52	7	6	53
	Government assisted	134	35157	670	123	11	5	52
	Private	22	4225	139	20	10	6	30
P-o-S & Environs	Total	35	11540	270	30	7	8	43
	Government	10	3120	51	9	2	5	61
	Government assisted	18	6497	142	16	1	8	46
	Private	7	1923	77	5	4	11	25
St. George East	Total	40	11975	246	38	7	6	49
	Government	11	4378	77	10	3	7	57
	Government assisted	22	6293	131	21	1	6	48
	Private	7	1304	38	7	3	5	34
North Eastern	Total	18	3474	59	17	1	3	59
	Government	5	540	16	5	0	3	34
	Government assisted	13	2934	43	12	1	3	68
	Private	0	0	0	0	0	0	0
South Eastern	Total	21	5358	89	20	5	4	60
	Government	3	1028	24	3	1	8	43
	Government assisted	17	4262	64	16	3	4	67
	Private	1	68	1	1	1	1	68
Caroni	Total	27	9119	144	25	1	5	63
	Government	8	3900	50	7	0	6	78
	Government assisted	19	5219	94	18	1	5	56
	Private	0	0	0	0	0	0	0
Victoria	Total	32	7108	144	29	3	5	49
	Government	7	1290	42	6	0	6	31
	Government assisted	23	5316	95	21	2	4	56
	Private	2	502	7	2	1	4	72
St. Patrick	Total	25	5591	106	24	1	4	53
	Government	8	1952	33	8	0	4	59
	Government assisted	15	3409	67	14	1	4	51
	Private	2	230	6	2	0	3	38
Tobago	Total	15	1995	69	12	3	5	29
	Government	5	570	25	4	1	5	23
	Government assisted	7	1227	34	5	1	5	36
	Private	3	198	10	3	1	3	20

Of the responding 213 schools, 195 or 92% had computers of which 14% had access to the internet. On average, the computer to school ratio was 5:1 and student to computer ratio was 50:1. By type of school, however, the data show a lower student to computer ratio of 30:1 in private primary schools.

Chart 32. Percentage of Schools with Computer by Educational District

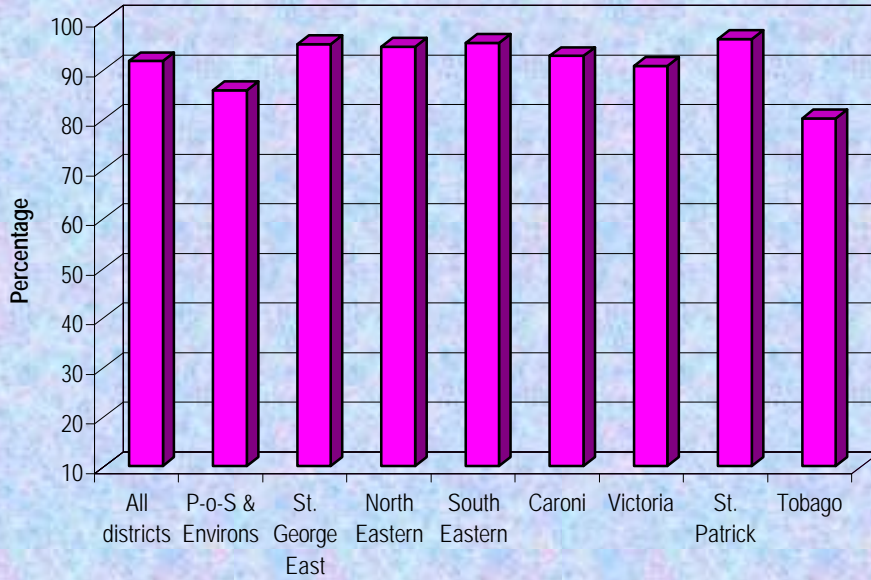


Chart 33. Mean Number of Students per Computer by Educational District

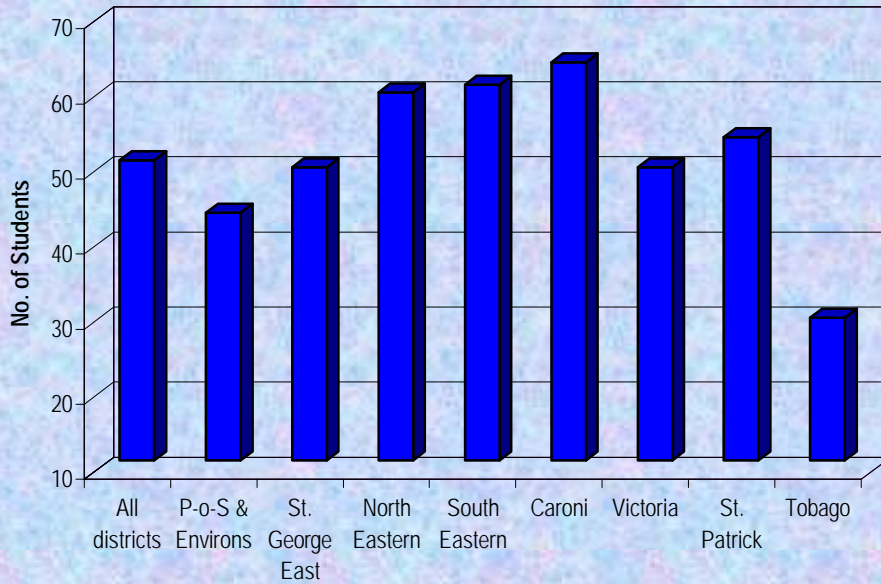


Table 21. Distribution of Computers by Enrolment

Enrolment	Total no. schools	Enrolment	No. of computers	No. of schools with		Mean no. of	
				Computers	Internet access	Computers/school	Students/computer
	(1)	(2)	(3)	(4)	(5)	(6)	(7)
All schools	213	56160	1127	195	28	5	50
Less than 100 students	45	2740	145	41	5	3	19
100 - 199 "	55	7778	213	51	8	4	37
200 - 299 "	43	10405	185	39	5	4	56
300 - 399 "	22	7706	139	21	4	6	55
400 - 499 "	19	8203	154	17	2	8	53
500 and over "	29	19328	291	26	4	10	66

By enrolment, the computer to school ratio was 3:1 in schools of less than 100 students and 10:1 in schools of 500 and over. But the student to computer ratio declined from 66:1 in the larger schools of student population of 500 and over to 19:1 in schools with less than 100 students.

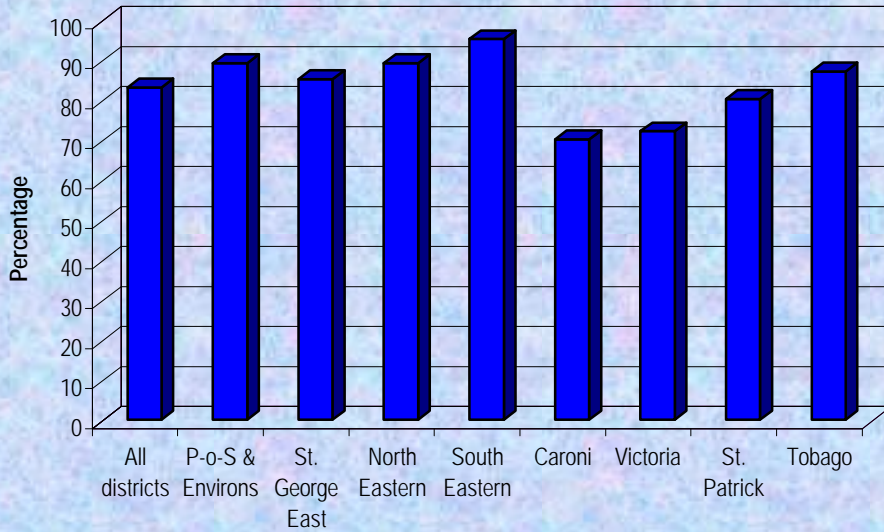
Table 22. Percentage Distribution of Information and Communication Equipment by Educational District and Type of School

Educational district	Type of school	All schools	Percentage of schools with equipment				
			Photocopier	Projector	T.V.	Video	Cassette player
		(1)	(2)	(3)	(4)	(5)	(6)
All districts	All schools	213	83	49	93	80	93
	Government	57	88	44	93	77	91
	Government assisted	134	82	56	94	82	94
	Private	22	73	18	86	73	95
P-o-S & Environs	Total	35	89	43	91	83	94
	Government	10	100	20	80	70	90
	Government assisted	18	89	61	100	94	100
	Private	7	71	29	86	71	86
St. George East	Total	40	85	63	98	86	95
	Government	11	91	55	100	82	100
	Government assisted	22	86	77	100	86	91
	Private	7	71	29	86	81	100
North Eastern	Total	18	89	33	100	89	86
	Government	5	100	20	100	80	100
	Government assisted	13	85	38	100	92	85
	Private	0	0	0	0	0	0
South Eastern	Total	21	95	67	95	86	95
	Government	3	100	100	100	100	100
	Government assisted	17	94	65	94	88	94
	Private	1	100	0	100	0	100
Caroni	Total	27	70	63	96	81	93
	Government	8	75	75	100	100	75
	Government assisted	19	68	58	89	74	100
	Private	0	0	0	0	0	0
Victoria	Total	32	72	41	84	81	94
	Government	7	71	29	71	71	86
	Government assisted	23	70	48	87	83	96
	Private	2	100	0	100	100	100
St. Patrick	Total	25	80	40	88	68	88
	Government	8	88	38	100	75	88
	Government assisted	15	80	47	87	67	87
	Private	2	50	0	50	50	100
Tobago	Total	15	87	27	100	60	100
	Government	5	80	40	100	40	100
	Government assisted	7	100	29	100	57	100
	Private	3	67	0	100	100	100

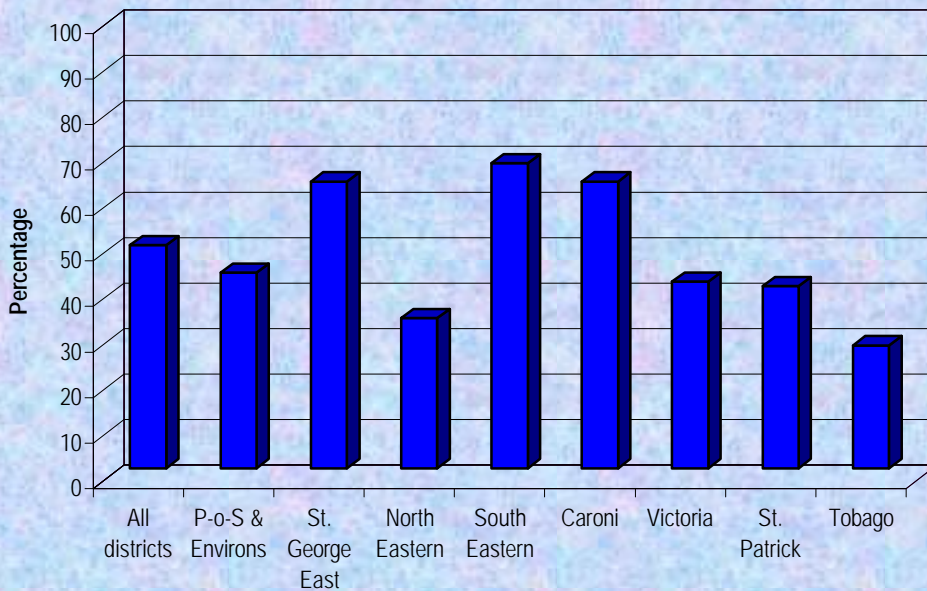
Except for the projector, a significant proportion of all primary schools by educational district and type was supplied with information and communication equipment as shown in Table 22. By enrolment size the distribution of equipment was also similar (Table 23).

Chart 34. Percentage of Schools With Information and Communication Equipment by Educational District

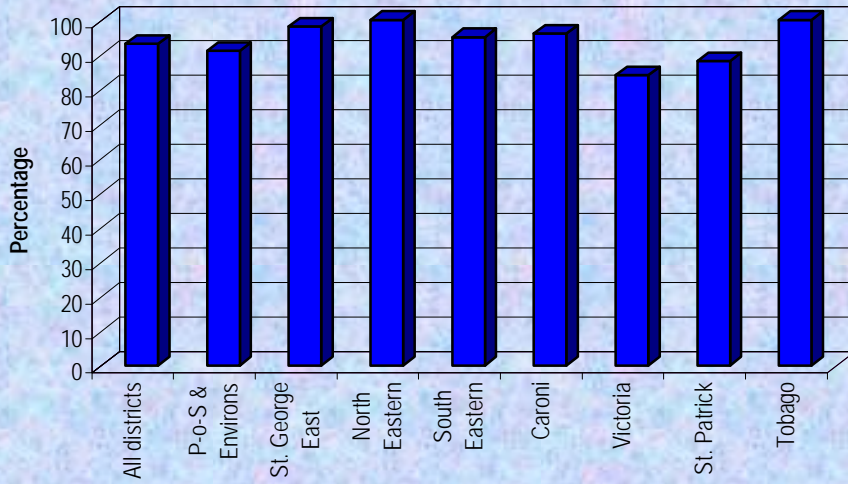
Photocopier



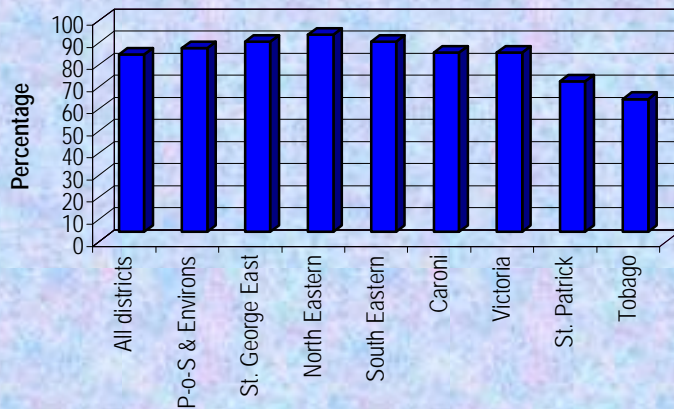
Projector



T.V.



Video



Cassette Player

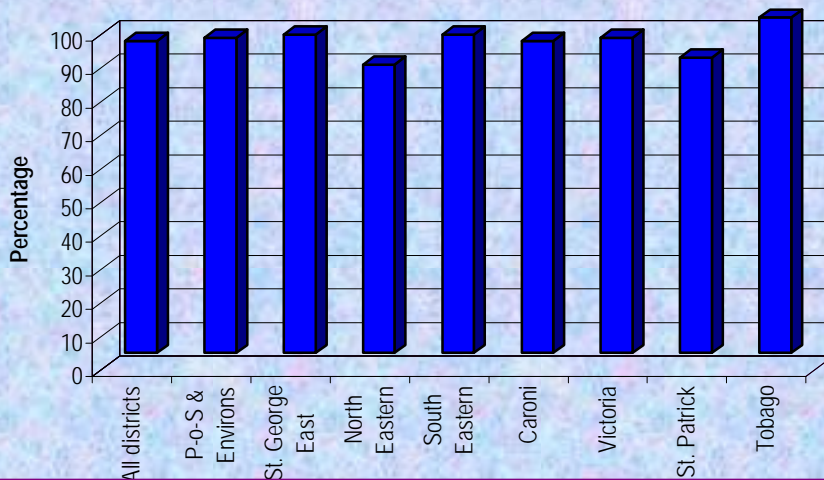


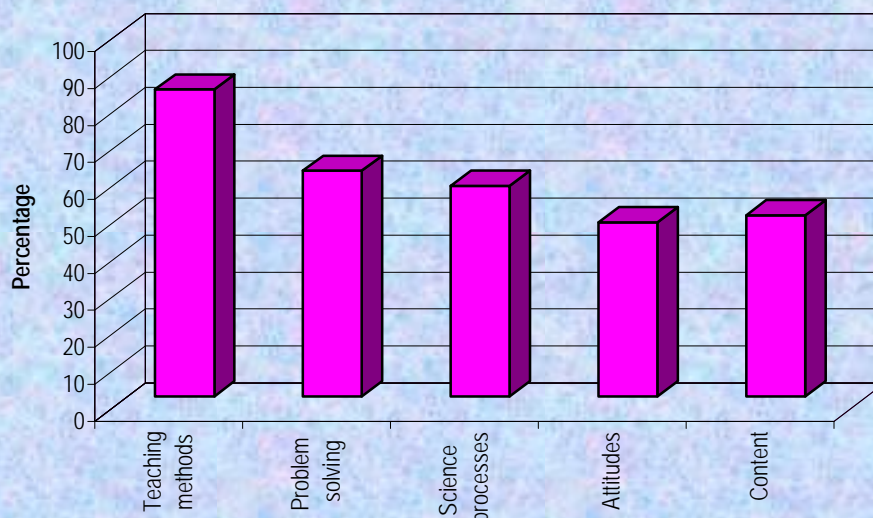
Table 23. Percentage Distribution of Information and Communication Equipment by Enrolment

Enrolment	Total no. of schools	Percentage of schools with equipment				
		Photocopier	Projector	T.V.	Video	Cassette player
	(1)	(2)	(3)	(4)	(5)	(6)
All schools	213	83	49	93	80	93
Less than 100 students	45	78	27	84	69	84
100 - 199 "	55	82	38	96	82	96
200 - 299 "	43	88	58	93	84	95
300 - 399 "	22	73	59	91	73	95
400 - 499 "	19	98	63	100	89	95
500 and over "	29	83	72	97	86	97

Table 24. Areas Considered Priority in Science Education by Educational District

Educational district	Total no. of principals	Priority areas - percentage				
		Teaching methods	Problem solving	Science processes	Attitudes	Content
	(1)	(2)	(3)	(4)	(5)	(6)
All districts	213	83	61	57	47	49
P-o-S & Environs	35	69	69	54	43	51
St. George East	40	85	60	53	43	43
North Eastern	18	78	56	56	44	39
South Eastern	21	76	67	67	62	57
Caroni	27	81	63	63	44	48
Victoria	32	88	50	56	44	53
St. Patrick	25	96	60	60	64	68
Tobago	15	93	67	53	33	27

Chart 35. Percentage Distribution of Priority Areas - All Districts



A review of the data from all educational districts indicates that most principals (83%) considered teaching methods as the key priority area in science education. This was followed by problem solving (61%) and science processes (57%).

Table 25. Number of Teachers by Educational District, Standard and Gender

Educational district	Standard and no. of teachers														
	All standards			2			3			4			5		
	Total	Male	Female	Total	Male	Female	Total	Male	Female	Total	Male	Female	Total	Male	Female
(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)	(13)	(14)	(15)	
All districts	820	298	522	211	59	152	208	69	139	201	74	127	200	96	104
P-o-S & Environs	135	44	91	34	10	24	35	10	25	34	9	25	32	15	17
St. George East	153	62	91	40	10	30	39	13	26	37	20	17	37	19	18
North Eastern	65	29	36	17	5	12	18	8	10	14	8	6	16	8	8
South Eastern	84	36	48	21	8	13	21	9	12	21	8	13	21	11	10
Caroni	104	38	66	28	9	19	25	7	18	26	8	18	25	14	11
Victoria	127	38	89	31	5	26	32	8	24	32	10	22	32	15	17
St. Patrick	97	35	62	24	9	15	25	10	15	24	6	18	24	10	14
Tobago	55	16	39	16	3	13	13	4	9	13	5	8	13	4	9

Including all districts, the male to female teacher ratio in primary schools was 1:1.8. By standard, however, the male to female ratio was 1:2.6 in standard two compared to 1:1 in standard five (Chart 36). This pattern of the gender distribution of teachers by standard was also observed in government and government assisted schools (Table 26a).

Table 25a. Percentage of Teachers by Gender within Educational District and Standard

Educational district	Standard and percentage of teachers														
	All standards			2			3			4			5		
	Total	Male	Female	Total	Male	Female	Total	Male	Female	Total	Male	Female	Total	Male	Female
(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)	(13)	(14)	(15)	
All districts	100	36	64	100	28	72	100	33	67	100	37	63	100	48	52
P-o-S & Environs	100	33	67	100	29	71	100	29	71	100	26	74	100	47	53
St. George East	100	41	59	100	25	75	100	33	67	100	54	46	100	51	49
North Eastern	100	45	55	100	29	71	100	44	56	100	57	43	100	50	50
South Eastern	100	43	57	100	38	62	100	43	57	100	38	62	100	52	48
Caroni	100	37	63	100	32	68	100	28	72	100	31	69	100	56	44
Victoria	100	30	70	100	16	84	100	25	75	100	31	69	100	47	53
St. Patrick	100	36	64	100	38	63	100	40	60	100	25	75	100	42	58
Tobago	100	29	71	100	19	81	100	31	69	100	38	62	100	31	69

Chart 36. Percentage of Teachers by Gender within Standard - All Educational Districts

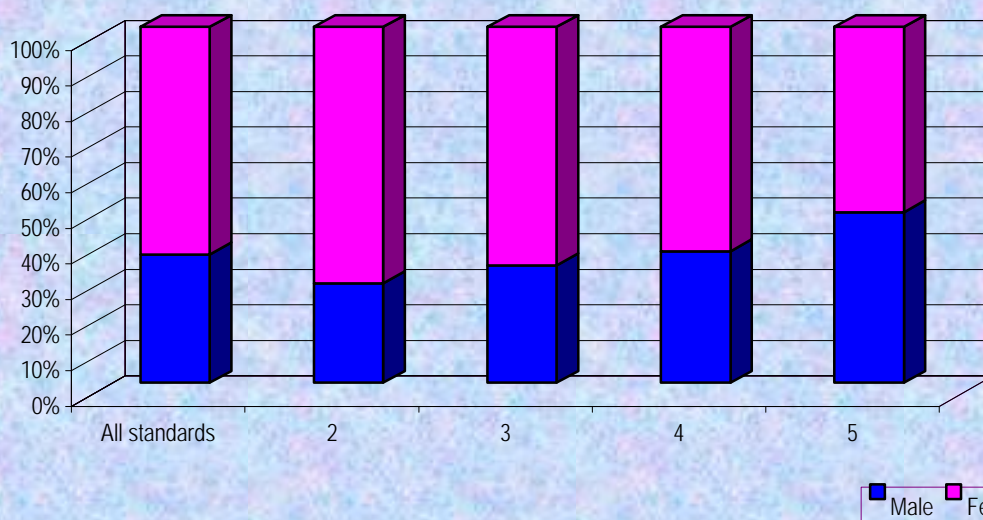


Table 26. Number of Teachers by Type of School, Standard and Gender

Type of school	Standard and no. of teachers														
	All standards			2			3			4			5		
	Total	Male	Female	Total	Male	Female	Total	Male	Female	Total	Male	Female	Total	Male	Female
(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)	(13)	(14)	(15)	
All schools	820	298	522	211	59	152	208	69	139	201	74	127	200	96	104
Government	219	89	130	56	15	41	55	23	32	56	25	31	52	26	26
Government assisted	520	192	328	134	41	93	132	43	89	125	45	80	129	63	66
Private	81	17	64	21	3	18	21	3	18	20	4	16	19	7	12

Chart 37. Percentage of Teachers by Gender within Standard - Government Schools

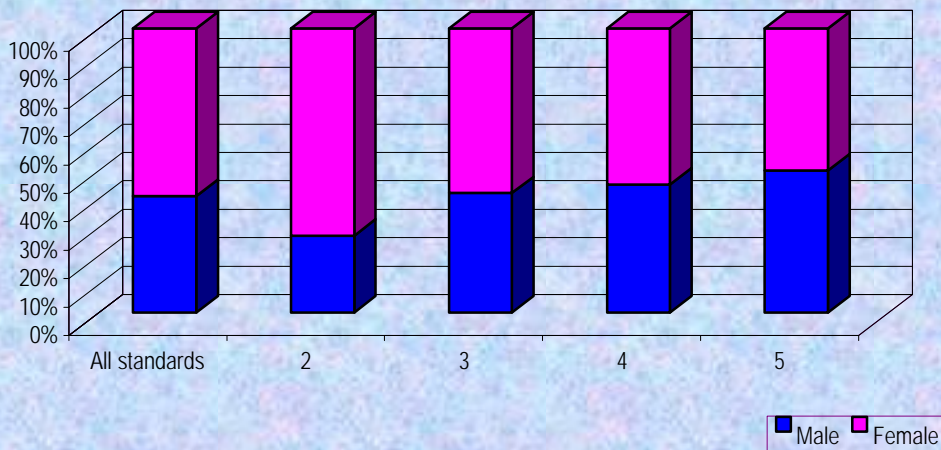


Table 26a. Percentage of Teachers by Gender within Type of School and Standard

Type of school	Standard and percentage of teachers														
	All standards			2			3			4			5		
	Total	Male	Female	Total	Male	Female	Total	Male	Female	Total	Male	Female	Total	Male	Female
(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)	(13)	(14)	(15)	
All schools	100	36	64	100	28	72	100	33	67	100	37	63	100	48	52
Government	100	41	59	100	27	73	100	42	58	100	45	55	100	50	50
Government assisted	100	37	63	100	31	69	100	33	67	100	36	64	100	49	51
Private	100	21	79	100	14	86	100	14	86	100	20	80	100	37	63

Chart 38. Percentage of Teachers by Gender within Standard - Government Assisted Schools

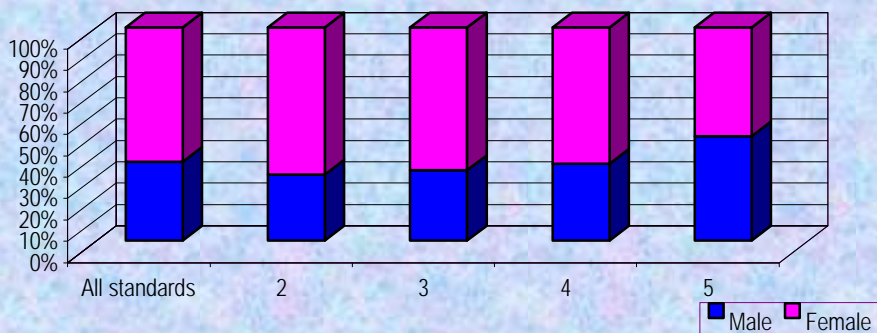


Chart 39. Percentage of Teachers by Gender within Standard - Private Schools

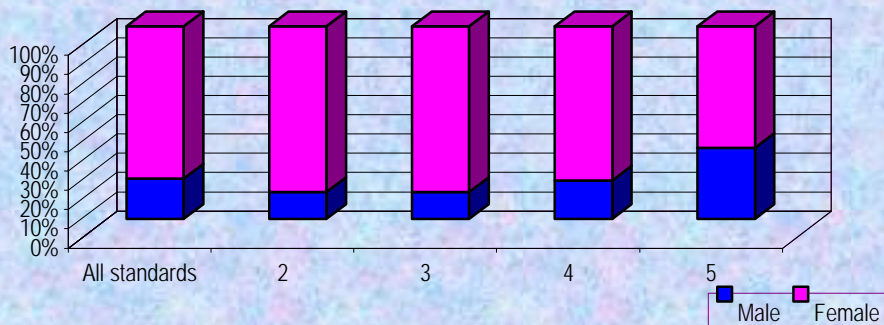


Table 27. Number of Teachers With/Without O'Level/C.X.C. Pass in Mathematics by Educational District, Type of School and Gender

Educational district	Type of school	No. of teachers with O'Level/C.X.C. pass In Mathematics								
		Total	All teachers		Male			Female		
			Yes	No	Total	Yes	No	Total	Yes	No
		(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)
All districts	All schools	820	691	129	298	269	29	522	422	100
	Government	219	189	30	89	82	7	130	107	23
	Government assisted	520	435	85	192	174	18	328	261	67
	Private	81	67	14	17	13	4	64	54	10
P-o-S & Environs	Total	135	117	18	44	41	3	91	76	15
	Government	40	37	3	14	14	0	26	23	3
	Government assisted	67	57	10	26	24	2	41	33	8
	Private	28	23	5	4	3	1	24	20	4
St. George East	Total	153	116	37	62	54	8	91	62	29
	Government	44	34	10	18	16	2	26	18	8
	Government assisted	83	62	21	37	33	4	46	29	17
	Private	26	20	6	7	5	2	19	15	4
North Eastern	Total	65	62	3	29	29	0	36	33	3
	Government	18	18	0	10	10	0	8	8	0
	Government assisted	47	44	3	19	19	0	28	25	3
	Private	0	0	0	0	0	0	0	0	0
South Eastern	Total	84	75	9	36	32	4	48	43	5
	Government	12	11	1	6	6	0	6	5	1
	Government assisted	68	63	5	29	26	3	39	37	2
	Private	4	1	3	1	0	1	3	1	2
Caroni	Total	104	92	12	38	35	3	66	57	9
	Government	30	28	2	15	13	2	15	15	0
	Government assisted	74	64	10	23	22	1	51	42	9
	Private	0	0	0	0	0	0	0	0	0
Victoria	Total	127	105	22	38	35	3	89	70	19
	Government	27	23	4	10	10	0	17	13	4
	Government assisted	96	78	18	28	25	3	68	53	15
	Private	4	4	0	0	0	0	4	4	0
St. Patrick	Total	97	82	15	35	31	4	62	51	11
	Government	30	25	5	11	10	1	19	15	4
	Government assisted	59	49	10	22	19	3	37	30	7
	Private	8	8	0	2	2	0	6	6	0
Tobago	Total	55	42	13	16	12	4	39	30	9
	Government	18	13	5	5	3	2	13	10	3
	Government assisted	26	18	8	8	6	2	18	12	6
	Private	11	11	0	3	3	0	8	8	0

Table 27a. Percentage of Teachers With/Without O'Level/C.X.C. Pass in Mathematics by Educational District, Type of School and Gender

Educational district	Type of School	Percentage of teachers with O'Level/C.X.C. pass In Mathematics								
		Total	All teachers		Male			Female		
			Yes	No	Total	Yes	No	Total	Yes	No
(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)		
All districts	All schools	100	84	16	100	90	10	100	81	19
	Government	100	86	14	100	92	8	100	82	18
	Government assisted	100	84	16	100	91	9	100	80	20
	Private	100	83	17	100	76	24	100	84	16
P-o-S & Environs	Total	100	87	13	100	93	7	100	84	16
	Government	100	93	8	100	100	0	100	88	12
	Government assisted	100	85	15	100	92	8	100	80	20
	Private	100	82	18	100	75	25	100	83	17
St. George East	Total	100	77	23	100	89	11	100	69	31
	Government	100	77	23	100	89	11	100	69	31
	Government assisted	100	75	25	100	89	11	100	63	37
	Private	100	77	23	100	71	29	100	79	21
North Eastern	Total	100	94	6	100	100	0	100	89	11
	Government	100	100	0	100	100	0	100	100	0
	Government assisted	100	94	6	100	100	0	100	89	11
	Private	0	0	0	0	0	0	0	0	0
South Eastern	Total	100	89	11	100	89	11	100	90	10
	Government	100	92	8	100	100	0	100	83	17
	Government assisted	100	93	7	100	90	10	100	95	5
	Private	100	25	75	100	0	100	100	33	67
Caroni	Total	100	88	12	100	92	8	100	86	14
	Government	100	93	7	100	87	13	100	100	0
	Government assisted	100	86	14	100	96	4	100	82	18
	Private	0	0	0	0	0	0	0	0	0
Victoria	Total	100	83	17	100	86	14	100	81	19
	Government	100	85	15	100	100	0	100	76	24
	Government assisted	100	81	19	100	89	11	100	78	22
	Private	100	100	0	0	0	0	100	100	0
St. Patrick	Total	100	85	15	100	87	13	100	82	18
	Government	100	83	17	100	91	9	100	79	21
	Government assisted	100	83	17	100	86	14	100	81	19
	Private	100	100	0	100	100	0	100	100	0
Tobago	Total	100	76	24	100	75	25	100	77	23
	Government	100	72	28	100	60	40	100	77	23
	Government assisted	100	69	31	100	75	25	100	67	33
	Private	100	100	0	100	100	0	100	100	0

Eighty four percent (84%) of the teachers in the primary schools surveyed had an O'Level or C.X.C. pass in Mathematics (Table 27a).

Chart 40. Percentage of Teachers With/Without O'Level/C.X.C. Pass in Mathematics by Educational District

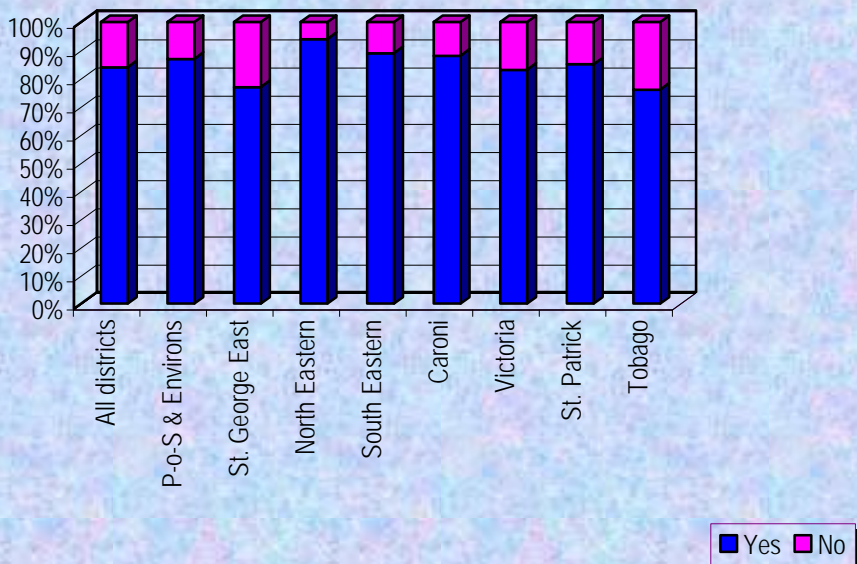


Table 28. Number of Teachers With/Without O'Level/C.X.C. Pass in Computer Science by Educational District, Type of School and Gender

Educational district	Type of school	No. of teachers with O'Level/C.X.C. pass In Computer Science								
		Total	All teachers		Male			Female		
			Yes	No	Total	Yes	No	Total	Yes	No
		(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)
All districts	All schools	820	44	776	298	18	280	522	26	496
	Government	219	11	208	89	7	82	130	4	126
	Government assisted	520	28	492	192	10	182	328	18	310
	Private	81	5	76	17	1	16	64	4	60
P-o-S & Environs	Total	135	5	130	44	2	42	91	3	88
	Government	40	1	39	14	1	13	26	0	26
	Government assisted	67	2	65	26	0	26	41	2	39
	Private	28	2	26	4	1	3	24	1	23
St. George East	Total	135	5	130	44	2	42	91	3	88
	Government	44	4	40	18	3	15	26	1	25
	Government assisted	83	5	78	37	2	35	46	3	43
	Private	26	2	24	7	0	7	19	2	17
North Eastern	Total	65	3	62	29	0	29	36	3	33
	Government	18	1	17	10	0	10	8	1	7
	Government assisted	47	2	45	19	0	19	28	2	26
	Private	0	0	0	0	0	0	0	0	0
South Eastern	Total	84	2	82	36	2	34	48	0	48
	Government	12	0	12	6	0	6	6	0	6
	Government assisted	68	2	66	29	2	27	39	0	39
	Private	4	0	4	1	0	1	3	0	3
Caroni	Total	104	6	98	38	2	36	66	4	62
	Government	30	2	28	15	1	14	15	1	14
	Government assisted	74	4	70	23	1	22	51	3	48
	Private	0	0	0	0	0	0	0	0	0
Victoria	Total	127	8	119	38	3	35	89	5	84
	Government	27	2	25	10	2	8	17	0	17
	Government assisted	96	6	90	28	1	27	68	5	63
	Private	4	0	4	0	0	0	4	0	4
St. Patrick	Total	97	7	90	35	4	31	62	3	59
	Government	30	1	29	11	0	11	19	1	18
	Government assisted	59	6	53	22	4	18	37	2	35
	Private	8	0	8	2	0	2	6	0	6
Tobago	Total	55	2	53	16	0	16	39	2	37
	Government	18	0	18	5	0	5	13	0	13
	Government assisted	26	1	25	8	0	8	18	1	17
	Private	11	1	10	3	0	3	8	1	7

Table 28a. Percentage of Teachers With/Without O'Level/C.X.C. Pass in Computer Science by Educational District, Type of School and Gender

Educational district	Type of school	Percentage of teachers with O'Level/C.X.C. pass in Computer Science								
		Total	All teachers		Male			Female		
			Yes	No	Total	Yes	No	Total	Yes	No
(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)		
All districts	All schools	100	5	95	100	6	94	100	5	95
	Government	100	5	95	100	8	92	100	3	97
	Government assisted	100	5	95	100	5	95	100	5	95
	Private	100	6	94	100	6	94	100	6	94
P-o-S & Environs	Total	100	4	96	100	5	95	100	3	97
	Government	100	3	98	100	7	93	100	0	100
	Government assisted	100	3	97	100	0	100	100	5	95
	Private	100	7	93	100	25	75	100	4	96
St. George East	Total	100	4	96	100	5	95	100	3	97
	Government	100	9	91	100	17	83	100	4	96
	Government assisted	100	6	94	100	5	95	100	7	93
	Private	100	8	92	100	0	100	100	11	89
North Eastern	Total	100	5	95	100	0	100	100	8	92
	Government	100	6	94	100	0	100	100	13	88
	Government assisted	100	4	96	100	0	100	100	7	93
	Private	0	0	0	0	0	0	0	0	0
South Eastern	Total	100	2	98	100	6	94	100	0	100
	Government	100	0	100	100	0	100	100	0	100
	Government assisted	100	3	97	100	7	93	100	0	100
	Private	100	0	100	100	0	100	100	0	100
Caroni	Total	100	6	94	100	5	95	100	6	94
	Government	100	7	93	100	7	93	100	7	93
	Government assisted	100	5	95	100	4	96	100	6	94
	Private	0	0	0	0	0	0	0	0	0
Victoria	Total	100	6	94	100	8	92	100	6	94
	Government	100	7	93	100	20	80	100	0	100
	Government assisted	100	6	94	100	4	96	100	7	93
	Private	100	0	100	0	0	0	100	0	100
St. Patrick	Total	100	7	93	100	11	89	100	5	95
	Government	100	3	97	100	0	100	100	5	95
	Government assisted	100	10	90	100	18	82	100	5	95
	Private	100	0	100	100	0	100	100	0	100
Tobago	Total	100	4	96	100	0	100	100	5	95
	Government	100	0	100	100	0	100	100	0	100
	Government assisted	100	4	96	100	0	100	100	6	94
	Private	100	9	91	100	0	100	100	13	88

Only 5% of primary school teachers had obtained an O'Level/C.X.C. pass in Computer Science which is a relatively new subject in the secondary school curriculum.

Chart 41. Percentage of Teachers With/Without O'Level/C.X.C. Pass in Computer Science by Educational District

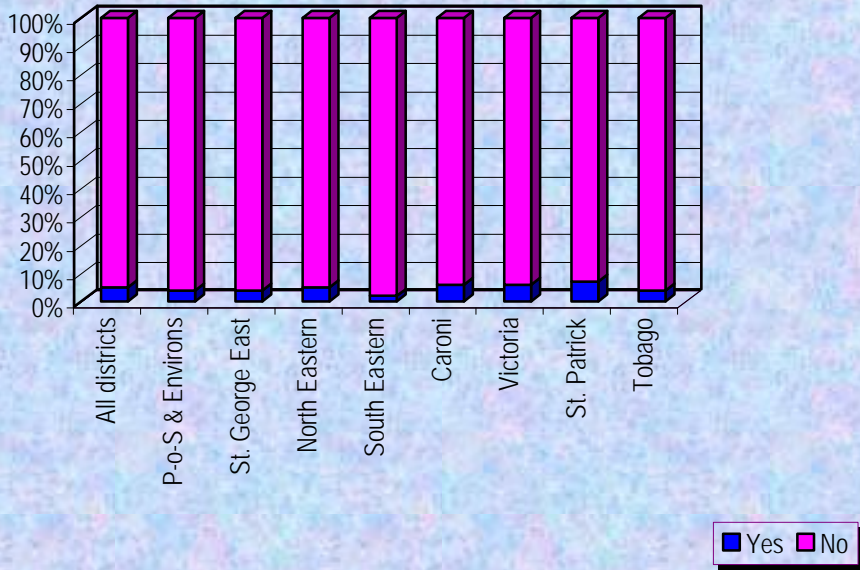


Table 29. Number of Teachers With/Without O'Level/C.X.C. Pass in Biology by Educational District, Type of School and Gender

Educational district	Type of School	No. of teachers with O'Level/C.X.C. pass in Biology								
		Total	All teachers		Male			Female		
			Yes	No	Total	Yes	No	Total	Yes	No
		(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)
All districts	All schools	820	405	415	298	161	137	522	244	278
	Government	219	130	89	89	54	35	130	76	54
	Government assisted	520	236	284	192	100	92	328	136	192
	Private	81	39	42	17	7	10	64	32	32
P-o-S & Environs	Total	135	66	69	44	23	21	91	43	48
	Government	40	24	16	14	8	6	26	16	10
	Government assisted	67	31	36	26	14	12	41	17	24
	Private	28	11	17	4	1	3	24	10	14
St. George East	Total	153	73	80	62	30	32	91	43	48
	Government	44	26	18	18	9	9	26	17	9
	Government assisted	83	35	48	37	19	18	46	16	30
	Private	26	12	14	7	2	5	19	10	9
North Eastern	Total	65	34	31	29	17	12	36	17	19
	Government	18	13	5	10	9	1	8	4	4
	Government assisted	47	21	26	19	8	11	28	13	15
	Private	0	0	0	0	0	0	0	0	0
South Eastern	Total	84	38	46	36	19	17	48	19	29
	Government	12	7	5	6	3	3	6	4	2
	Government assisted	68	28	40	29	15	14	39	13	26
	Private	4	3	1	1	1	0	3	2	1
Caroni	Total	104	64	40	38	29	9	66	35	31
	Government	30	20	10	15	11	4	15	9	6
	Government assisted	74	44	30	23	18	5	51	26	25
	Private	0	0	0	0	0	0	0	0	0
Victoria	Total	127	64	63	38	21	17	89	43	46
	Government	27	17	10	10	7	3	17	10	7
	Government assisted	96	44	52	28	14	14	68	30	38
	Private	4	3	1	0	0	0	4	3	1
St. Patrick	Total	97	35	62	35	13	22	62	22	40
	Government	30	14	16	11	6	5	19	8	11
	Government assisted	59	20	39	22	7	15	37	13	24
	Private	8	1	7	2	0	2	6	1	5
Tobago	Total	55	31	24	16	9	7	39	22	17
	Government	18	9	9	5	1	4	13	8	5
	Government assisted	26	13	13	8	5	3	18	8	10
	Private	11	9	2	3	3	0	8	6	2

Table 29a. Percentage of Teachers With/Without O'Level/C.X.C. Pass in Biology by Educational District, Type of School and Gender

Educational district	Type of school	Percentage of teachers with O'Level/C.X.C. pass in Biology								
		Total	All teachers		Male			Female		
			Yes	No	Total	Yes	No	Total	Yes	No
(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)		
All districts	All schools	100	49	51	100	54	46	100	47	53
	Government	100	59	41	100	61	39	100	58	42
	Government assisted	100	45	55	100	52	48	100	41	59
	Private	100	48	52	100	41	59	100	50	50
P-o-S & Environs	Total	100	49	51	100	52	48	100	47	53
	Government	100	60	40	100	57	43	100	62	38
	Government assisted	100	46	54	100	54	46	100	41	59
	Private	100	39	61	100	25	75	100	42	58
St. George East	Total	100	48	52	100	48	52	100	47	53
	Government	100	59	41	100	50	50	100	65	35
	Government assisted	100	42	58	100	51	49	100	35	65
	Private	100	46	54	100	29	71	100	53	47
North Eastern	Total	100	52	48	100	59	41	100	47	53
	Government	100	72	28	100	90	10	100	50	50
	Government assisted	100	45	55	100	42	58	100	46	54
	Private	0	0	0	0	0	0	0	0	0
South Eastern	Total	100	45	55	100	53	47	100	40	60
	Government	100	58	42	100	50	50	100	67	33
	Government assisted	100	41	59	100	52	48	100	33	67
	Private	100	75	25	100	100	0	100	67	33
Caroni	Total	100	62	38	100	76	24	100	53	47
	Government	100	67	33	100	73	27	100	60	40
	Government assisted	100	59	41	100	78	22	100	51	49
	Private	0	0	0	0	0	0	0	0	0
Victoria	Total	100	50	50	100	55	45	100	48	52
	Government	100	63	37	100	70	30	100	59	41
	Government assisted	100	46	54	100	50	50	100	44	56
	Private	100	75	25	0	0	0	100	75	25
St. Patrick	Total	100	36	64	100	37	63	100	35	65
	Government	100	47	53	100	55	45	100	42	58
	Government assisted	100	34	66	100	32	68	100	35	65
	Private	100	13	88	100	0	100	100	17	83
Tobago	Total	100	56	44	100	56	44	100	56	44
	Government	100	50	50	100	20	80	100	62	38
	Government assisted	100	50	50	100	63	38	100	44	56
	Private	100	82	18	100	100	0	100	75	25

Of the natural sciences, approximately half of the teachers (49%) had acquired O'Level/C.X.C. certification in Biology (Table 29a), 29% had a similar qualification in Chemistry (Table 30a), 18% in Physics (Table 31a) and 7% in Integrated Science (Table 32a). However, further review of the data indicated that 62% of teachers had an O'Level/C.X.C. pass in at least one of the sciences (Table 33a).

Chart 42. Percentage of Teachers With/Without O'Level/C.X.C. Pass in Biology by Educational District

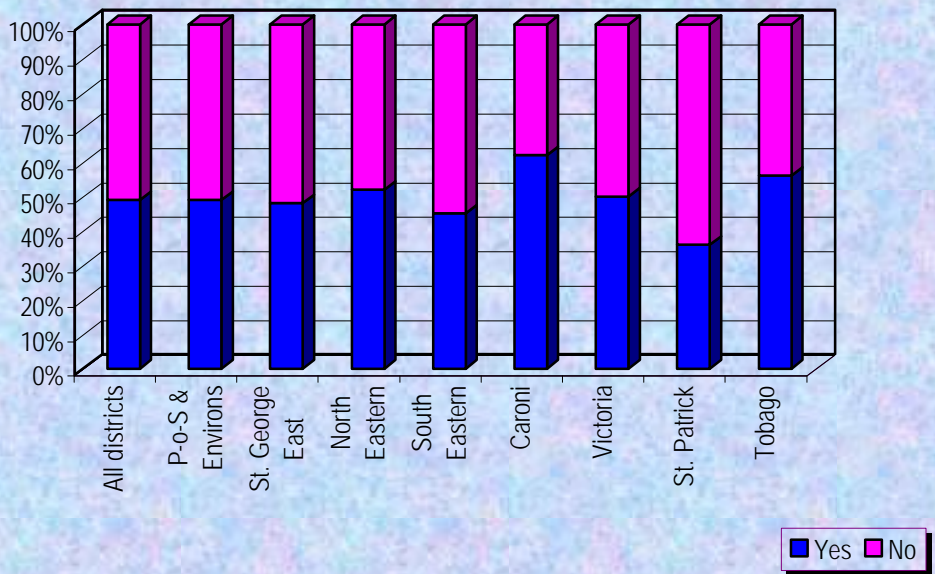


Table 30. Number of Teachers With/Without O'Level/C.X.C. Pass in Chemistry by Educational District, Type of School and Gender

Educational district	Type of school	No. of teachers with O'Level/C.X.C. pass in Chemistry								
		Total	All teachers		Male			Female		
			Yes	No	Total	Yes	No	Total	Yes	No
		(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)
All districts	All schools	820	241	579	298	112	186	522	129	393
	Government	219	78	141	89	42	47	130	36	94
	Government assisted	520	140	380	192	67	125	328	73	255
	Private	81	23	58	17	3	14	64	20	44
P-o-S & Environs	Total	135	43	92	44	16	28	91	27	64
	Government	40	16	24	14	7	7	26	9	17
	Government assisted	67	19	48	26	7	19	41	12	29
	Private	28	8	20	4	2	2	24	6	18
St. George East	Total	153	35	118	62	13	49	91	22	69
	Government	44	13	31	18	6	12	26	7	19
	Government assisted	83	15	68	37	6	31	46	9	37
	Private	26	7	19	7	1	6	19	6	13
North Eastern	Total	65	15	50	29	11	18	36	4	32
	Government	18	6	12	10	5	5	8	1	7
	Government assisted	47	9	38	19	6	13	28	3	25
	Private	0	0	0	0	0	0	0	0	0
South Eastern	Total	84	27	57	36	14	22	48	13	35
	Government	12	4	8	6	2	4	6	2	4
	Government assisted	68	21	47	29	12	17	39	9	30
	Private	4	2	2	1	0	1	3	2	1
Caroni	Total	104	45	59	38	27	11	66	18	48
	Government	30	16	14	15	11	4	15	5	10
	Government assisted	74	29	45	23	16	7	51	13	38
	Private	0	0	0	0	0	0	0	0	0
Victoria	Total	127	44	83	38	18	20	89	26	63
	Government	27	11	16	10	5	5	17	6	11
	Government assisted	96	33	63	28	13	15	68	20	48
	Private	4	0	4	0	0	0	4	0	4
St. Patrick	Total	97	19	78	35	8	27	62	11	51
	Government	30	9	21	11	4	7	19	5	14
	Government assisted	59	10	49	22	4	18	37	6	31
	Private	8	0	8	2	0	2	6	0	6
Tobago	Total	55	13	42	16	5	11	39	8	31
	Government	18	3	15	5	2	3	13	1	12
	Government assisted	26	4	22	8	3	5	18	1	17
	Private	11	6	5	3	0	3	8	6	2

Table 30a. Percentage of Teachers With/Without O'Level/C.X.C. Pass in Chemistry by Educational District, Type of School and Gender

Educational district	Type of school	Percentage of teachers with O'Level/C.X.C. pass in Chemistry								
		Total	All teachers		Male			Female		
			Yes	No	Total	Yes	No	Total	Yes	No
		(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)
All districts	All schools	100	29	71	100	38	62	100	25	75
	Government	100	36	64	100	47	53	100	28	72
	Government assisted	100	27	73	100	35	65	100	22	78
	Private	100	28	72	100	18	82	100	31	69
P-o-S & Environs	Total	100	32	68	100	36	64	100	30	70
	Government	100	40	60	100	50	50	100	35	65
	Government assisted	100	28	72	100	27	73	100	29	71
	Private	100	29	71	100	50	50	100	25	75
St. George East	Total	100	23	77	100	21	79	100	24	76
	Government	100	30	70	100	33	67	100	27	73
	Government assisted	100	18	82	100	16	84	100	20	80
	Private	100	27	73	100	14	86	100	32	68
North Eastern	Total	100	23	77	100	38	62	100	11	89
	Government	100	33	67	100	50	50	100	13	88
	Government assisted	100	19	81	100	32	68	100	11	89
	Private	0	0	0	0	0	0	0	0	0
South Eastern	Total	100	32	68	100	39	61	100	27	73
	Government	100	33	67	100	33	67	100	33	67
	Government assisted	100	31	69	100	41	59	100	23	77
	Private	100	50	50	100	0	100	100	67	33
Caroni	Total	100	43	57	100	71	29	100	27	73
	Government	100	53	47	100	73	27	100	33	67
	Government assisted	100	39	61	100	70	30	100	25	75
	Private	0	0	0	0	0	0	0	0	0
Victoria	Total	100	35	65	100	47	53	100	29	71
	Government	100	41	59	100	50	50	100	35	65
	Government assisted	100	34	66	100	46	54	100	29	71
	Private	100	0	100	0	0	0	100	0	100
St. Patrick	Total	100	20	80	100	23	77	100	18	82
	Government	100	30	70	100	36	64	100	26	74
	Government assisted	100	17	83	100	18	82	100	16	84
	Private	100	0	100	100	0	100	100	0	100
Tobago	Total	100	24	76	100	31	69	100	21	79
	Government	100	17	83	100	40	60	100	8	92
	Government assisted	100	15	85	100	38	63	100	6	94
	Private	100	55	45	100	0	100	100	75	25

Chart 43. Percentage of Teachers With/Without O'Level/C.X.C. Pass in Chemistry by Educational District

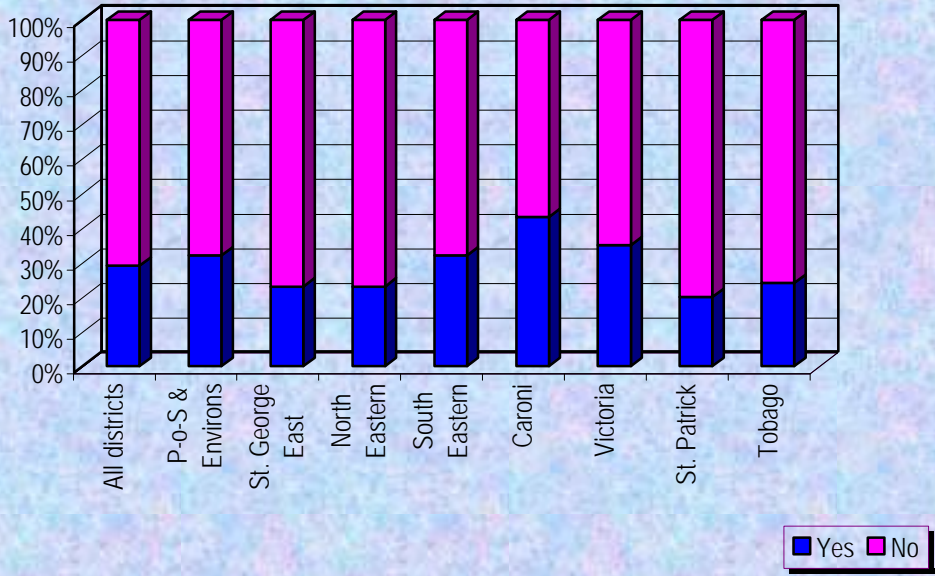


Table 31. Number of Teachers With/Without O'Level/C.X.C. Pass in Physics by Educational District, Type of School and Gender

Educational district	Type of school	No. of teachers with O'Level/C.X.C. pass in Physics								
		Total	All teachers		Male			Female		
			Yes	No	Total	Yes	No	Total	Yes	No
		(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)
All districts	All schools	820	145	675	298	77	221	522	68	454
	Government	219	45	174	89	29	60	130	16	114
	Government assisted	520	83	437	192	46	146	328	37	291
	Private	81	17	64	17	2	15	64	15	49
P-o-S & Environs	Total	135	31	104	44	10	34	91	21	70
	Government	40	9	31	14	4	10	26	5	21
	Government assisted	67	13	54	26	5	21	41	8	33
	Private	28	9	19	4	1	3	24	8	16
St. George East	Total	153	27	126	62	15	47	91	12	79
	Government	44	9	35	18	6	12	26	3	23
	Government Assisted	83	11	72	37	8	29	46	3	43
	Private	26	7	19	7	1	6	19	6	13
North Eastern	Total	65	12	53	29	10	19	36	2	34
	Government	18	5	13	10	4	6	8	1	7
	Government Assisted	47	7	40	19	6	13	28	1	27
	Private	0	0	0	0	0	0	0	0	0
South Eastern	Total	84	12	72	36	7	29	48	5	43
	Government	12	4	8	6	2	4	6	2	4
	Government Assisted	68	8	60	29	5	24	39	3	36
	Private	4	0	4	1	0	1	3	0	3
Caroni	Total	104	23	81	38	13	25	66	10	56
	Government	30	6	24	15	4	11	15	2	13
	Government Assisted	74	17	57	23	9	14	51	8	43
	Private	0	0	0	0	0	0	0	0	0
Victoria	Total	127	17	110	38	10	28	89	7	82
	Government	27	2	25	10	2	8	17	0	17
	Government Assisted	96	15	81	28	8	20	68	7	61
	Private	4	0	4	0	0	0	4	0	4
St. Patrick	Total	97	14	83	35	8	27	62	6	56
	Government	30	7	23	11	5	6	19	2	17
	Government Assisted	59	7	52	22	3	19	37	4	33
	Private	8	0	8	2	0	2	6	0	6
Tobago	Total	55	9	46	16	4	12	39	5	34
	Government	18	3	15	5	2	3	13	1	12
	Government Assisted	26	5	21	8	2	6	18	3	15
	Private	11	1	10	3	0	3	8	1	7

Table 31a. Percentage of Teachers With/Without O'Level/C.X.C. Pass in Physics by Educational District, Type of School and Gender

Educational district	Type of school	Percentage of teachers with O'Level/C.X.C. pass in Physics								
		Total	All teachers		Male			Female		
			Yes	No	Total	Yes	No	Total	Yes	No
		(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)
All districts	All schools	100	18	82	100	26	74	100	13	87
	Government	100	21	79	100	33	67	100	12	88
	Government assisted	100	16	84	100	24	76	100	11	89
	Private	100	21	79	100	12	88	100	23	77
P-o-S & Environs	Total	100	23	77	100	23	77	100	23	77
	Government	100	23	78	100	29	71	100	19	81
	Government assisted	100	19	81	100	19	81	100	20	80
	Private	100	32	68	100	25	75	100	33	67
St. George East	Total	100	18	82	100	24	76	100	13	87
	Government	100	20	80	100	33	67	100	12	88
	Government Assisted	100	13	87	100	22	78	100	7	93
	Private	100	27	73	100	14	86	100	32	68
North Eastern	Total	100	18	82	100	34	66	100	6	94
	Government	100	28	72	100	40	60	100	13	88
	Government Assisted	100	15	85	100	32	68	100	4	96
	Private	0	0	0	0	0	0	0	0	0
South Eastern	Total	100	14	86	100	19	81	100	10	90
	Government	100	33	67	100	33	67	100	33	67
	Government Assisted	100	12	88	100	17	83	100	8	92
	Private	100	0	100	100	0	100	100	0	100
Caroni	Total	100	22	78	100	34	66	100	15	85
	Government	100	20	80	100	27	73	100	13	87
	Government Assisted	100	23	77	100	39	61	100	16	84
	Private	0	0	0	0	0	0	0	0	0
Victoria	Total	100	13	87	100	26	74	100	8	92
	Government	100	7	93	100	20	80	100	0	100
	Government Assisted	100	16	84	100	29	71	100	10	90
	Private	100	0	100	0	0	0	100	0	100
St. Patrick	Total	100	14	86	100	23	77	100	10	90
	Government	100	23	77	100	45	55	100	11	89
	Government Assisted	100	12	88	100	14	86	100	11	89
	Private	100	0	100	100	0	100	100	0	100
Tobago	Total	100	16	84	100	25	75	100	13	87
	Government	100	17	83	100	40	60	100	8	92
	Government Assisted	100	19	81	100	25	75	100	17	83
	Private	100	9	91	100	0	100	100	13	88

Chart 44. Percentage of Teachers With/Without O'Level/C.X.C. Pass in Physics by Educational District

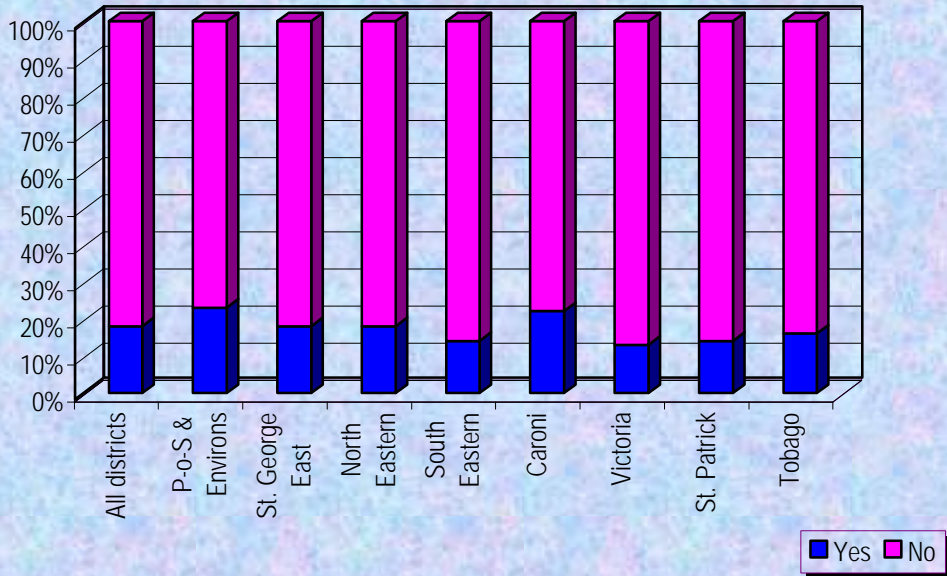


Table 32. Number of Teachers With/Without O'Level/C.X.C. Pass in Integrated Science by Educational District, Type of School and Gender

Educational district	Type of school	No. of teachers with O'Level/C.X.C. pass in Intergrated Science								
		Total	All teachers		Male			Female		
			Yes	No	Total	Yes	No	Total	Yes	No
		(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)
All districts	All schools	820	61	759	298	24	274	522	37	485
	Government	219	15	204	89	7	82	130	8	122
	Government assisted	520	39	481	192	15	177	328	24	304
	Private	81	7	74	17	2	15	64	5	59
P-o-S & Environs	Total	135	7	128	44	3	41	91	4	87
	Government	40	2	38	14	1	13	26	1	25
	Government assisted	67	5	62	26	2	24	41	3	38
	Private	28	0	28	4	0	4	24	0	24
St. George East	Total	153	7	146	62	3	59	91	4	87
	Government	44	2	42	18	1	17	26	1	25
	Government Assisted	83	4	79	37	2	35	46	2	44
	Private	26	1	25	7	0	7	19	1	18
North Eastern	Total	65	8	57	29	3	26	36	5	31
	Government	18	3	15	10	1	9	8	2	6
	Government Assisted	47	5	42	19	2	17	28	3	25
	Private	0	0	0	0	0	0	0	0	0
South Eastern	Total	84	7	77	36	5	31	48	2	46
	Government	12	0	12	6	0	6	6	0	6
	Government Assisted	68	7	61	29	5	24	39	2	37
	Private	4	0	4	1	0	1	3	0	3
Caroni	Total	104	7	97	38	3	35	66	4	62
	Government	30	2	28	15	2	13	15	0	15
	Government Assisted	74	5	69	23	1	22	51	4	47
	Private	0	0	0	0	0	0	0	0	0
Victoria	Total	127	8	119	38	2	36	89	6	83
	Government	27	2	25	10	2	8	17	0	17
	Government Assisted	96	6	90	28	0	28	68	6	62
	Private	4	0	4	0	0	0	4	0	4
St. Patrick	Total	97	11	86	35	3	32	62	8	54
	Government	30	3	27	11	0	11	19	3	16
	Government Assisted	59	5	54	22	1	21	37	4	33
	Private	8	3	5	2	2	0	6	1	5
Tobago	Total	55	6	49	16	2	14	39	4	35
	Government	18	1	17	5	0	5	13	1	12
	Government Assisted	26	2	24	8	2	6	18	0	18
	Private	11	3	8	3	0	3	8	3	5

Table 32a. Percentage of Teachers With/Without O'Level/C.X.C. Pass in Integrated Science by Educational District, Type of School and Gender

Educational district	Type of school	Percentage of teachers with O'Level/C.X.C. pass in Intergrated Science								
		Total	All teachers		Male			Female		
			Yes	No	Total	Yes	No	Total	Yes	No
		(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)
All districts	All schools	100	7	93	100	8	92	100	7	93
	Government	100	7	93	100	8	92	100	6	94
	Government assisted	100	8	93	100	8	92	100	7	93
	Private	100	9	91	100	12	88	100	8	92
P-o-S & Environs	Total	100	5	95	100	7	93	100	4	96
	Government	100	5	95	100	7	93	100	4	96
	Government assisted	100	7	93	100	8	92	100	7	93
	Private	100	0	100	100	0	100	100	0	100
St. George East	Total	100	5	95	100	5	95	100	4	96
	Government	100	5	95	100	6	94	100	4	96
	Government Assisted	100	5	95	100	5	95	100	4	96
	Private	100	4	96	100	0	100	100	5	95
North Eastern	Total	100	12	88	100	10	90	100	14	86
	Government	100	17	83	100	10	90	100	25	75
	Government Assisted	100	11	89	100	11	89	100	11	89
	Private	0	0	0	0	0	0	0	0	0
South Eastern	Total	100	8	92	100	14	86	100	4	96
	Government	100	0	100	100	0	100	100	0	100
	Government Assisted	100	10	90	100	17	83	100	5	95
	Private	100	0	100	100	0	100	100	0	100
Caroni	Total	100	7	93	100	8	92	100	6	94
	Government	100	7	93	100	13	87	100	0	100
	Government Assisted	100	7	93	100	4	96	100	8	92
	Private	0	0	0	0	0	0	0	0	0
Victoria	Total	100	6	94	100	5	95	100	7	93
	Government	100	7	93	100	20	80	100	0	100
	Government Assisted	100	6	94	100	0	100	100	9	91
	Private	100	0	100	0	0	0	100	0	100
St. Patrick	Total	100	11	89	100	9	91	100	13	87
	Government	100	10	90	100	0	100	100	16	84
	Government Assisted	100	8	92	100	5	95	100	11	89
	Private	100	38	63	100	100	0	100	17	83
Tobago	Total	100	11	89	100	13	88	100	10	90
	Government	100	6	94	100	0	100	100	8	92
	Government Assisted	100	8	92	100	25	75	100	0	100
	Private	100	27	73	100	0	100	100	38	63

Chart 45. Percentage of Teachers With/Without O'Level/C.X.C. Pass in Integrated Science by Educational District

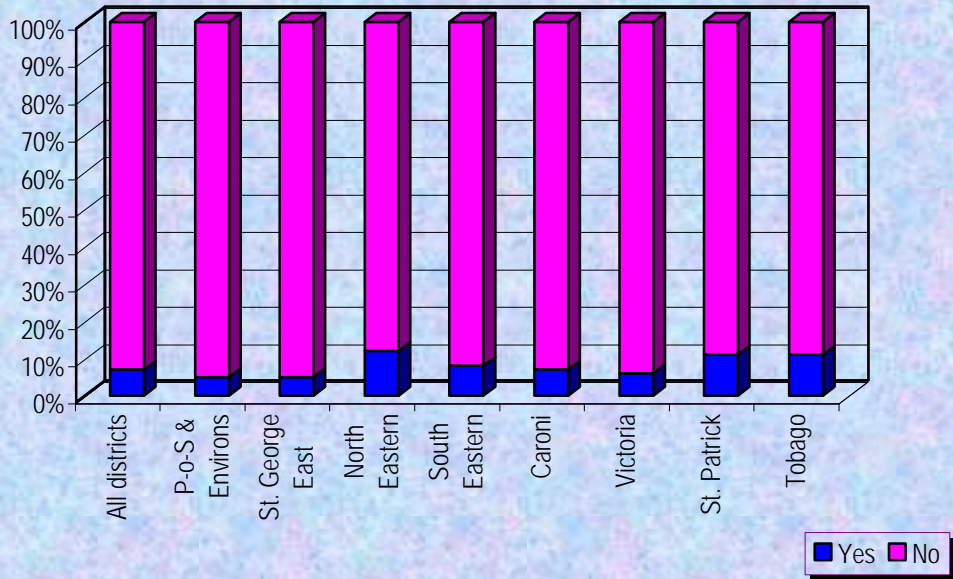


Table 33. Number of Teachers With/Without O'Level/C.X.C. Pass in Science* by Educational District, Type of School and Gender

Educational district	Type of school	No. of teachers with O'Level/C.X.C. pass in Science								
		Total	All teachers		Male			Female		
			Yes	No	Total	Yes	No	Total	Yes	No
		(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)
All districts	All schools	820	508	312	298	210	88	522	298	224
	Government	219	156	63	89	72	17	130	84	46
	Government assisted	520	304	216	192	127	65	328	177	151
	Private	81	48	33	17	11	6	64	37	27
P-o-S & Environs	Total	135	84	51	44	31	13	91	53	38
	Government	40	31	9	14	13	1	26	18	8
	Government assisted	67	40	27	26	16	10	41	24	17
	Private	28	13	15	4	2	2	24	11	13
St. George East	Total	153	92	61	62	39	23	91	53	38
	Government	44	31	13	18	13	5	26	18	8
	Government Assisted	83	46	37	37	23	14	46	23	23
	Private	26	15	11	7	3	4	19	12	7
North Eastern	Total	65	42	23	29	21	8	36	21	15
	Government	18	15	3	10	9	1	8	6	2
	Government Assisted	47	27	20	19	12	7	28	15	13
	Private	0	0	0	0	0	0	0	0	0
South Eastern	Total	84	51	33	36	27	9	48	24	24
	Government	12	9	3	6	5	1	6	4	2
	Government Assisted	68	39	29	29	21	8	39	18	21
	Private	4	3	1	1	1	0	3	2	1
Caroni	Total	104	75	29	38	34	4	66	41	25
	Government	30	22	8	15	13	2	15	9	6
	Government Assisted	74	53	21	23	21	2	51	32	19
	Private	0	0	0	0	0	0	0	0	0
Victoria	Total	127	80	47	38	26	12	89	54	35
	Government	27	18	9	10	8	2	17	10	7
	Government Assisted	96	59	37	28	18	10	68	41	27
	Private	4	3	1	0	0	0	4	3	1
St. Patrick	Total	97	48	49	35	19	16	62	29	33
	Government	30	19	11	11	8	3	19	11	8
	Government Assisted	59	25	34	22	9	13	37	16	21
	Private	8	4	4	2	2	0	6	2	4
Tobago	Total	55	36	19	16	13	3	39	23	16
	Government	18	11	7	5	3	2	13	8	5
	Government Assisted	26	15	11	8	7	1	18	8	10
	Private	11	10	1	3	3	0	8	7	1

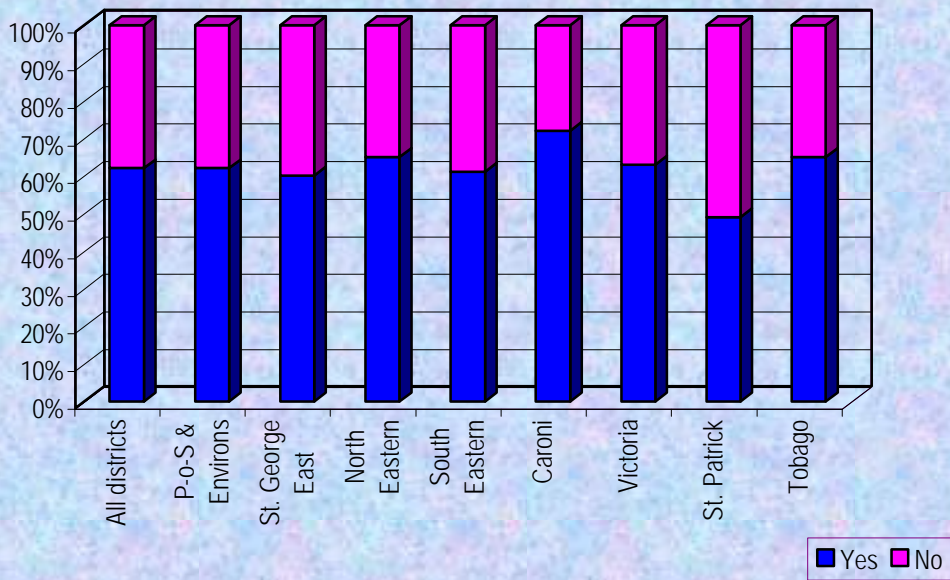
*Biology, Chemistry, Physics or Integrated Science

Table 33a. Percentage of Teachers With/Without O'Level/C.X.C. Pass in Science* by Educational District, Type of School and Gender

Educational district	Type of school	Percentage of teachers with O'Level/C.X.C. pass in Science								
		Total	All teachers		Male			Female		
			Yes	No	Total	Yes	No	Total	Yes	No
(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)		
All districts	All schools	100	62	38	100	70	30	100	57	43
	Government	100	71	29	100	81	19	100	65	35
	Government assisted	100	58	42	100	66	34	100	54	46
	Private	100	59	41	100	65	35	100	58	42
P-o-S & Environs	Total	100	62	38	100	70	30	100	58	42
	Government	100	78	23	100	93	7	100	69	31
	Government assisted	100	60	40	100	62	38	100	59	41
	Private	100	46	54	100	50	50	100	46	54
St. George East	Total	100	60	40	100	63	37	100	58	42
	Government	100	70	30	100	72	28	100	69	31
	Government Assisted	100	55	45	100	62	38	100	50	50
	Private	100	58	42	100	43	57	100	63	37
North Eastern	Total	100	65	35	100	72	28	100	58	42
	Government	100	83	17	100	90	10	100	75	25
	Government Assisted	100	57	43	100	63	37	100	54	46
	Private	0	0	0	0	0	0	0	0	0
South Eastern	Total	100	61	39	100	75	25	100	50	50
	Government	100	75	25	100	83	17	100	67	33
	Government Assisted	100	57	43	100	72	28	100	46	54
	Private	100	75	25	100	100	0	100	67	33
Caroni	Total	100	72	28	100	89	11	100	62	38
	Government	100	73	27	100	87	13	100	60	40
	Government Assisted	100	72	28	100	91	9	100	63	37
	Private	0	0	0	0	0	0	0	0	0
Victoria	Total	100	63	37	100	68	32	100	61	39
	Government	100	67	33	100	80	20	100	59	41
	Government Assisted	100	61	39	100	64	36	100	60	40
	Private	100	75	25	0	0	0	100	75	25
St. Patrick	Total	100	49	51	100	54	46	100	47	53
	Government	100	63	37	100	73	27	100	58	42
	Government Assisted	100	42	58	100	41	59	100	43	57
	Private	100	50	50	100	100	0	100	33	67
Tobago	Total	100	65	35	100	81	19	100	59	41
	Government	100	61	39	100	60	40	100	62	38
	Government Assisted	100	58	42	100	88	13	100	44	56
	Private	100	91	9	100	100	0	100	88	13

*Biology, Chemistry, Physics or Integrated Science

Chart 46. Percentage of Teachers With/Without O'Level/C.X.C. Pass in Science* by Educational District



*Biology, Chemistry, Physics or Integrated Science

Table 34. Number of Teachers With/Without A'Level Pass in Mathematics and Science by Type of School

Type of school	No. of teachers with A'Level pass by subject								
	Total	Mathematics		Biology		Chemistry		Physics	
		Yes	No	Yes	No	Yes	No	Yes	No
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)
All schools	820	69	751	42	778	63	757	26	794
Government	219	20	199	11	208	14	205	9	210
Government assisted	520	42	478	25	495	35	485	13	507
Private	81	7	74	6	75	14	67	4	77

Table 34a. Percentage of Teachers With/Without A'Level Pass in Mathematics and Science by Type of School

Type of School	Percentage of teachers with A'Level pass by subject								
	Total	Mathematics		Biology		Chemistry		Physics	
		Yes	No	Yes	No	Yes	No	Yes	No
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)
All schools	100	8	92	5	95	8	92	3	97
Government	100	9	91	5	95	6	94	4	96
Government assisted	100	8	92	5	95	7	93	3	98
Private	100	9	91	7	93	17	83	5	95

Less than 10% of primary school teachers had A'Levels in Mathematics or the science subjects except in the case of Chemistry (17%) in private schools.

Chart 47. Percentage of Teachers With/Without A'Level Pass by Subject - All Schools

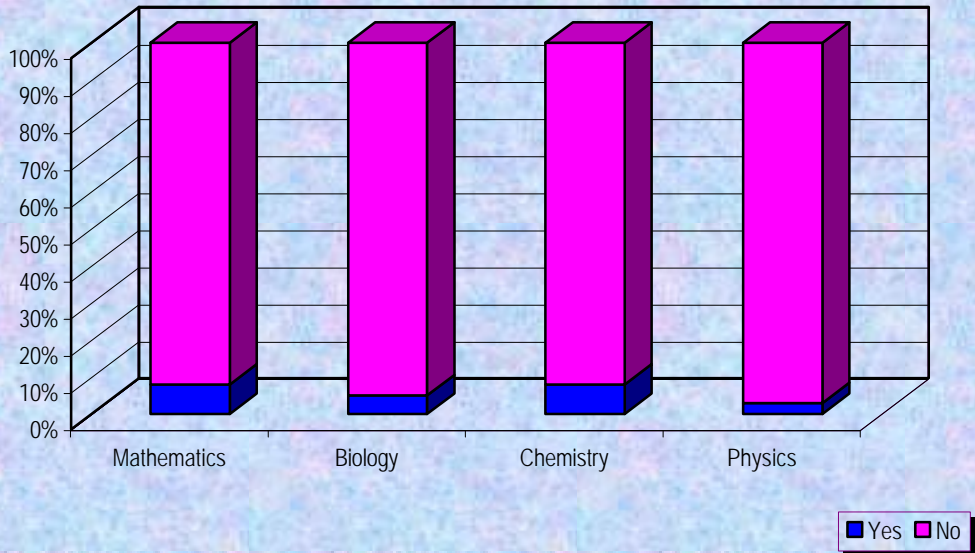


Table 35. Number of Teachers With/Without Tertiary Qualification by Type of School non-professional

Type of school	No. of teachers with tertiary qualification, non-professional				
	Total	Degree	Associate Degree	Diploma	None
	(1)	(2)	(3)	(4)	(5)
All schools	820	46	25	50	699
Government	219	13	5	16	185
Government assisted	520	20	12	32	456
Private	81	13	8	2	58

Table 35a. Percentage of Teachers With/Without Tertiary Qualification by Type of School and Gender non-professional

Type of school	Percentage of teachers with tertiary qualification, non-professional				
	Total	Degree	Associate Degree	Diploma	None
	(1)	(2)	(3)	(4)	(5)
All schools	100	6	3	6	85
Government	100	6	2	7	84
Government assisted	100	4	2	6	88
Private	100	16	10	2	72

Table 36. Number of Teachers by Highest Level of Professional Training, Educational District and Type of School

Educational district	Type of school	No. of teachers by highest level of professional training							
		Total	Teacher's Diploma	Certificate in Education	Diploma in Education	B.Ed.	M.Ed.	Other*	None
		(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
All districts	All schools	820	595	54	6	56	3	21	85
	Government	219	165	17	4	20	2	4	7
	Government assisted	520	401	27	0	32	0	11	49
	Private	81	29	10	2	4	1	6	29
P-o-S & Environs	Total	135	99	6	2	6	0	2	20
	Government	40	33	0	0	3	0	2	2
	Government assisted	67	60	1	0	2	0	0	4
	Private	28	6	5	2	1	0	0	14
St. George East	Total	153	98	18	1	10	0	8	18
	Government	44	31	5	1	3	0	0	4
	Government assisted	83	59	8	0	7	0	2	7
	Private	26	8	5	0	0	0	6	7
North Eastern	Total	65	51	2	0	4	0	0	8
	Government	18	16	0	0	1	0	0	1
	Government assisted	47	35	2	0	3	0	0	7
	Private	0	0	0	0	0	0	0	0
South Eastern	Total	84	68	2	0	3	0	0	11
	Government	12	10	1	0	1	0	0	0
	Government assisted	68	55	1	0	2	0	0	10
	Private	4	3	0	0	0	0	0	1
Caroni	Total	104	85	10	0	7	0	0	2
	Government	30	21	5	0	4	0	0	0
	Government assisted	74	64	5	0	3	0	0	2
	Private	0	0	0	0	0	0	0	0
Victoria	Total	127	83	10	3	15	1	7	8
	Government	27	14	4	3	5	1	0	0
	Government assisted	96	65	6	0	10	0	7	8
	Private	4	4	0	0	0	0	0	0
St. Patrick	Total	97	74	4	0	3	0	4	12
	Government	30	27	1	0	0	0	2	0
	Government assisted	59	43	3	0	3	0	2	8
	Private	8	4	0	0	0	0	0	4
Tobago	Total	55	37	2	0	8	2	0	6
	Government	18	13	1	0	3	1	0	0
	Government assisted	26	20	1	0	2	0	0	3
	Private	11	4	0	0	3	1	0	3

*A.C.P./L.C.P.

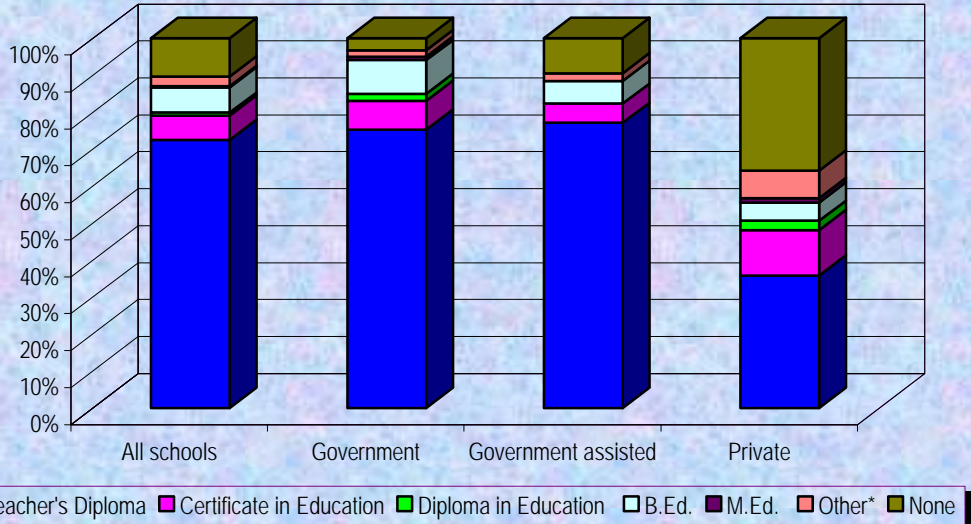
Table 36a. Percentage of Teachers by Highest Level of Professional Training, Educational District and Type of School

Educational district	Type of school	Percentage of teachers by highest level of professional training							
		Total	Teacher's Diploma	Certificate in Education	Diploma in Education	B.Ed.	M.Ed.	Other*	None
		(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
All districts	All schools	100	73	7	1	7	0	3	10
	Government	100	75	8	2	9	1	2	3
	Government assisted	100	77	5	0	6	0	2	9
	Private	100	36	12	2	5	1	7	36
P-o-S & Environs	Total	100	73	4	1	4	0	1	15
	Government	100	83	0	0	8	0	5	5
	Government assisted	100	90	1	0	3	0	0	6
	Private	100	21	18	7	4	0	0	50
St. George East	Total	100	64	12	1	7	0	5	12
	Government	100	70	11	2	7	0	0	9
	Government assisted	100	71	10	0	8	0	2	8
	Private	100	31	19	0	0	0	23	27
North Eastern	Total	100	78	3	0	6	0	0	12
	Government	100	89	0	0	6	0	0	6
	Government assisted	100	74	4	0	6	0	0	15
	Private	0	0	0	0	0	0	0	0
South Eastern	Total	100	81	2	0	4	0	0	13
	Government	100	83	8	0	8	0	0	0
	Government assisted	100	81	1	0	3	0	0	15
	Private	100	75	0	0	0	0	0	25
Caroni	Total	100	82	10	0	7	0	0	2
	Government	100	70	17	0	13	0	0	0
	Government assisted	100	86	7	0	4	0	0	3
	Private	0	0	0	0	0	0	0	0
Victoria	Total	100	65	8	2	12	1	6	6
	Government	100	52	15	11	19	4	0	0
	Government assisted	100	68	6	0	10	0	7	8
	Private	100	100	0	0	0	0	0	0
St. Patrick	Total	100	76	4	0	3	0	4	12
	Government	100	90	3	0	0	0	7	0
	Government assisted	100	73	5	0	5	0	3	14
	Private	100	50	0	0	0	0	0	50
Tobago	Total	100	67	4	0	15	4	0	11
	Government	100	72	6	0	17	6	0	0
	Government assisted	100	77	4	0	8	0	0	12
	Private	100	36	0	0	27	9	0	27

*A.C.P./L.C.P.

Table 36a. shows that over 90% of the teachers in government and government assisted schools had obtained professional certification mainly of a Teacher's Diploma. The B.Ed. qualification was held by 15% and 12% of teachers in the Tobago and Victoria educational districts respectively. Thirty six percent (36%) of private primary school teachers had no professional training.

Chart 48. Percentage of Teachers by Highest Level of Professional Training and Type of School



*A.C.P./L.C.P.

Table 37. Number of Teachers by Highest Level of Professional Training and Years of Service

Years of service	No. of teachers by highest level of professional training							
	Total	Teacher's Diploma	Certificate in Education	Diploma in Education	B.Ed.	M.Ed.	Other*	None
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
Total	820	595	54	6	56	3	21	85
Less than 5 yrs	71	14	1	1	1	0	6	48
5 - 9 "	170	144	4	1	3	0	2	16
10 - 19 "	289	213	35	1	24	1	2	13
20 - 29 "	156	119	8	2	16	1	6	4
30 - 39 "	114	92	5	1	10	1	5	0
40 and over "	20	13	1	0	2	0	0	4

Table 37a. Percentage of Teachers by Highest Level of Professional Training and Years of Service

Years of service	Percentage of teachers by highest level of professional training							
	Total	Teacher's Diploma	Certificate in Education	Diploma in Education	B.Ed.	M.Ed.	Other*	None
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
Total	100	73	7	1	7	0	3	10
Less than 5 yrs	100	20	1	1	1	0	8	68
5 - 9 "	100	85	2	1	2	0	1	9
10 - 19 "	100	74	12	0	8	0	1	4
20 - 29 "	100	76	5	1	10	1	4	3
30 - 39 "	100	81	4	1	9	1	4	0
40 and over "	100	65	5	0	10	0	0	20

*A.C.P./L.C.P.

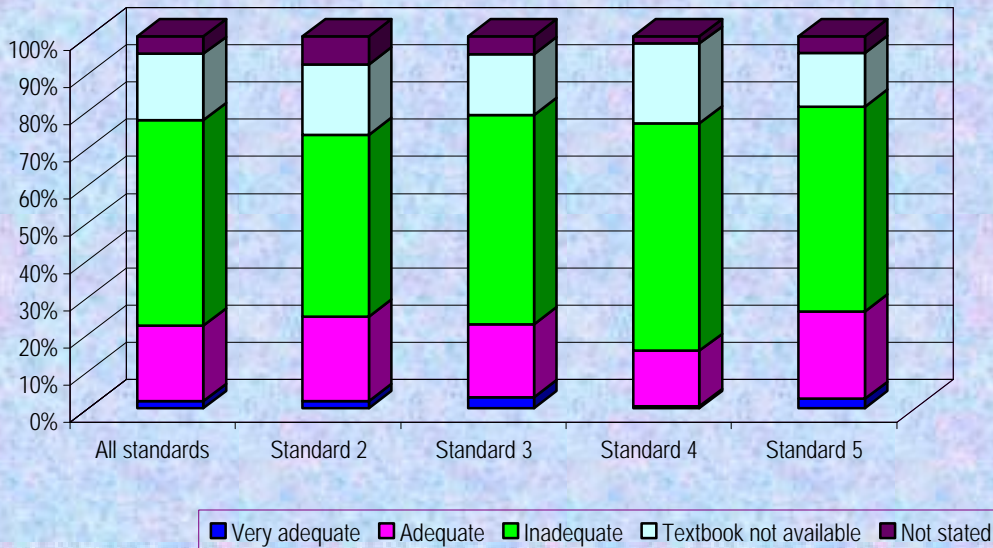
Table 38. Description of Science Textbooks by Standard and Educational District

Educational district	Standard	Description of science text books - no. of teachers					
		Total	Very adequate	Adequate	Inadequate	Textbooks not available	Not stated
		(1)	(2)	(3)	(4)	(5)	(6)
All districts	All standards	820	16	166	453	146	39
	Standard 2	211	4	48	103	40	16
	Standard 3	208	6	41	117	34	10
	Standard 4	201	1	30	123	43	4
	Standard 5	200	5	47	110	29	9
P-o-S & Environs	Total	135	3	33	74	17	8
	Standard 2	34	0	9	18	3	4
	Standard 3	35	0	6	23	4	2
	Standard 4	34	1	7	19	6	1
	Standard 5	32	2	11	14	4	1
St. George East	Total	153	3	44	75	24	7
	Standard 2	40	0	14	15	7	4
	Standard 3	39	3	11	18	6	1
	Standard 4	37	0	7	21	8	1
	Standard 5	37	0	12	21	3	1
North Eastern	Total	65	1	19	35	7	3
	Standard 2	17	1	6	8	1	1
	Standard 3	18	0	6	9	2	1
	Standard 4	14	0	4	10	0	0
	Standard 5	16	0	3	8	4	1
South Eastern	Total	84	2	7	53	21	1
	Standard 2	21	1	2	14	4	0
	Standard 3	21	0	3	13	5	0
	Standard 4	21	0	0	13	8	0
	Standard 5	21	1	2	13	4	1
Caroni	Total	104	3	11	69	19	2
	Standard 2	28	0	3	14	9	2
	Standard 3	25	1	3	17	4	0
	Standard 4	26	0	1	22	3	0
	Standard 5	25	2	4	16	3	0
Victoria	Total	127	3	20	70	31	3
	Standard 2	31	1	8	12	10	0
	Standard 3	32	2	5	18	5	2
	Standard 4	32	0	4	18	10	0
	Standard 5	32	0	3	22	6	1
St. Patrick	Total	97	1	20	51	21	4
	Standard 2	24	1	2	14	5	2
	Standard 3	25	0	5	13	5	2
	Standard 4	24	0	3	14	7	0
	Standard 5	24	0	10	10	4	0
Tobago	Total	55	0	12	26	6	11
	Standard 2	16	0	4	8	1	3
	Standard 3	13	0	2	6	3	2
	Standard 4	13	0	4	6	1	2
	Standard 5	13	0	2	6	1	4

Table 38a. Percentage Description of Science Textbooks by Standard and Educational District

Educational district	Standard	Description of science text books - percentage of teachers					
		Total	Very adequate	Adequate	Inadequate	Textbook not available	Not stated
		(1)	(2)	(3)	(4)	(5)	(6)
All districts	All standards	100	2	20	55	18	5
	Standard 2	100	2	23	49	19	8
	Standard 3	100	3	20	56	16	5
	Standard 4	100	0	15	61	21	2
	Standard 5	100	3	24	55	15	5
P-o-S & Environs	Total	100	2	24	55	13	6
	Standard 2	100	0	26	53	9	12
	Standard 3	100	0	17	66	11	6
	Standard 4	100	3	21	56	18	3
	Standard 5	100	6	34	44	13	3
St. George East	Total	100	2	29	49	16	5
	Standard 2	100	0	35	38	18	10
	Standard 3	100	8	28	46	15	3
	Standard 4	100	0	19	57	22	3
	Standard 5	100	0	32	57	8	3
North Eastern	Total	100	2	29	54	11	5
	Standard 2	100	6	35	47	6	6
	Standard 3	100	0	33	50	11	6
	Standard 4	100	0	29	71	0	0
	Standard 5	100	0	19	50	25	6
South Eastern	Total	100	2	8	63	25	1
	Standard 2	100	5	10	67	19	0
	Standard 3	100	0	14	62	24	0
	Standard 4	100	0	0	62	38	0
	Standard 5	100	5	10	62	19	5
Caroni	Total	100	3	11	66	18	2
	Standard 2	100	0	11	50	32	7
	Standard 3	100	4	12	68	16	0
	Standard 4	100	0	4	85	12	0
	Standard 5	100	8	16	64	12	0
Victoria	Total	100	2	16	55	24	2
	Standard 2	100	3	26	39	32	0
	Standard 3	100	6	16	56	16	6
	Standard 4	100	0	13	56	31	0
	Standard 5	100	0	9	69	19	3
St. Patrick	Total	100	1	21	53	22	4
	Standard 2	100	4	8	58	21	8
	Standard 3	100	0	20	52	20	8
	Standard 4	100	0	13	58	29	0
	Standard 5	100	0	42	42	17	0
Tobago	Total	100	0	22	47	11	20
	Standard 2	100	0	25	50	6	19
	Standard 3	100	0	15	46	23	15
	Standard 4	100	0	31	46	8	15
	Standard 5	100	0	15	46	8	31

Chart 49. Percentage Description of Science Textbooks by Standard - All Districts



The data reveal that more than half of the teachers (55%) indicated that the science texts were inadequate; a similar degree of response was recorded by teachers in standards 2 to 5 (Table 38a). On the issue of improvement of science texts, a substantial proportion of teachers (47%) stated that the prescribed texts should be in agreement with the syllabus and should contain more activities/assessment exercises. It was also suggested that texts should be graded in terms of age group/ability and provide better quality illustrations/print (Table 39).

Table 39. Suggestions for the Improvement of Science Texts by Educational District

Educational district	Total teachers	Improvement of science texts - percentage of teachers			
		Better quality illustrations/print	More activities/assessment exercises	Graded approach in terms of age group/ability	In agreement with syllabus
		(1)	(2)	(3)	(4)
All districts	820	26	42	22	47
P-o-S & Environs	135	39	48	21	40
St. George East	153	25	42	18	49
North Eastern	65	23	43	26	42
South Eastern	84	23	43	13	51
Caroni	104	24	39	23	57
Victoria	127	20	39	27	51
St. Patrick	97	24	43	28	48
Tobago	55	29	40	22	31

Chart 50. Suggestions for the Improvement of Science Texts - All Districts

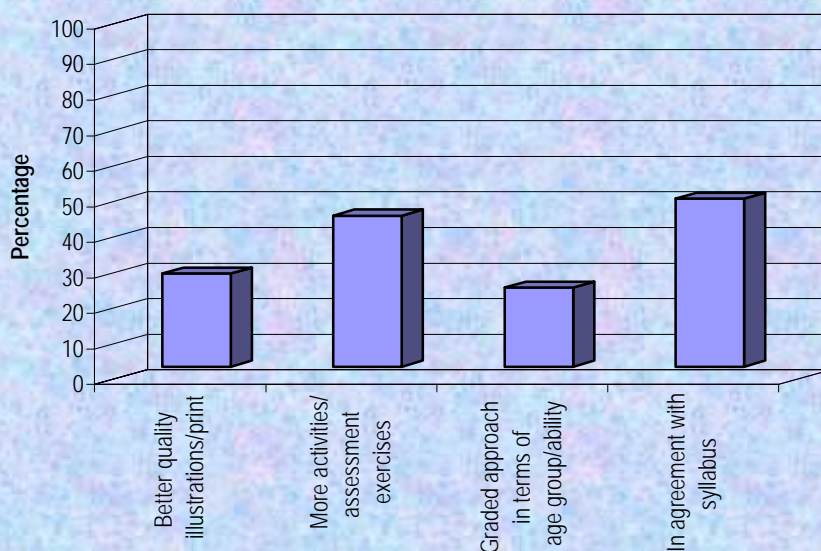


Table 40. Conduct of Experiments by Educational District and Type of School

Educational district	Type of school	Total	Place experiments conducted - no. of teachers			
			Laboratory	Classroom	Classroom and outdoor	Not stated
		(1)	(2)	(3)	(4)	(5)
All districts	All schools	820	100	360	340	20
	Government	219	36	105	72	6
	Government assisted	520	42	232	233	13
	Private	81	22	23	35	1
P-o-S & Environs	Total	135	29	63	39	4
	Government	40	4	24	12	0
	Government assisted	67	13	31	20	3
	Private	28	12	8	7	1
St. George East	Total	153	23	67	62	1
	Government	44	16	18	10	0
	Government assisted	83	2	41	39	1
	Private	26	5	8	13	0
North Eastern	Total	65	3	41	21	0
	Government	18	0	14	4	0
	Government assisted	47	3	27	17	0
	Private	0	0	0	0	0
South Eastern	Total	84	11	28	43	2
	Government	12	0	6	6	0
	Government assisted	68	9	22	35	2
	Private	4	2	0	2	0
Caroni	Total	104	14	49	39	2
	Government	30	12	11	7	0
	Government assisted	74	2	38	32	2
	Private	0	0	0	0	0
Victoria	Total	127	14	57	56	0
	Government	27	1	16	10	0
	Government assisted	96	13	39	44	0
	Private	4	0	2	2	0
St. Patrick	Total	97	0	38	57	2
	Government	30	0	12	17	1
	Government assisted	59	0	25	33	1
	Private	8	0	1	7	0
Tobago	Total	55	6	17	23	9
	Government	18	3	4	6	5
	Government assisted	26	0	9	13	4
	Private	11	3	4	4	0

**Table 40a. Conduct of Experiments by Educational District and Type of School
Percentage**

Educational district	Type of school	Total	Place experiments conducted - percentage of teachers			
			Laboratory	Classroom	Classroom and outdoor	Not stated
		(1)	(2)	(3)	(4)	(5)
All districts	All Schools	100	12	44	41	2
	Government	100	16	48	33	3
	Government assisted	100	8	45	45	3
	Private	100	27	28	43	1
P-o-S & Environs	Total	100	21	47	29	3
	Government	100	10	60	30	0
	Government assisted	100	19	46	30	4
	Private	100	43	29	25	4
St. George East	Total	100	15	44	41	1
	Government	100	36	41	23	0
	Government assisted	100	2	49	47	1
	Private	100	19	31	50	0
North Eastern	Total	100	5	63	32	0
	Government	100	0	78	22	0
	Government assisted	100	6	57	36	0
	Private	0	0	0	0	0
South Eastern	Total	100	13	33	51	2
	Government	100	0	50	50	0
	Government assisted	100	13	32	51	3
	Private	100	50	0	50	0
Caroni	Total	100	13	47	38	2
	Government	100	40	37	23	0
	Government assisted	100	3	51	43	3
	Private	0	0	0	0	0
Victoria	Total	100	11	45	44	0
	Government	100	4	59	37	0
	Government assisted	100	14	41	46	0
	Private	100	0	50	50	0
St. Patrick	Total	100	0	39	59	2
	Government	100	0	40	57	3
	Government assisted	100	0	42	56	2
	Private	100	0	13	88	0
Tobago	Total	100	11	31	42	16
	Government	100	17	22	33	28
	Government assisted	100	0	35	50	15
	Private	100	27	36	36	0

Only 12% of all teachers conducted experiments in laboratories, 44% in classrooms and 41% in classrooms and outdoor. Twenty seven percent (27%) of private school teachers conducted experiments in laboratories compared with 16% in government and 8% in government assisted schools.

Chart 51. Conduct of Experiments by Educational Districts

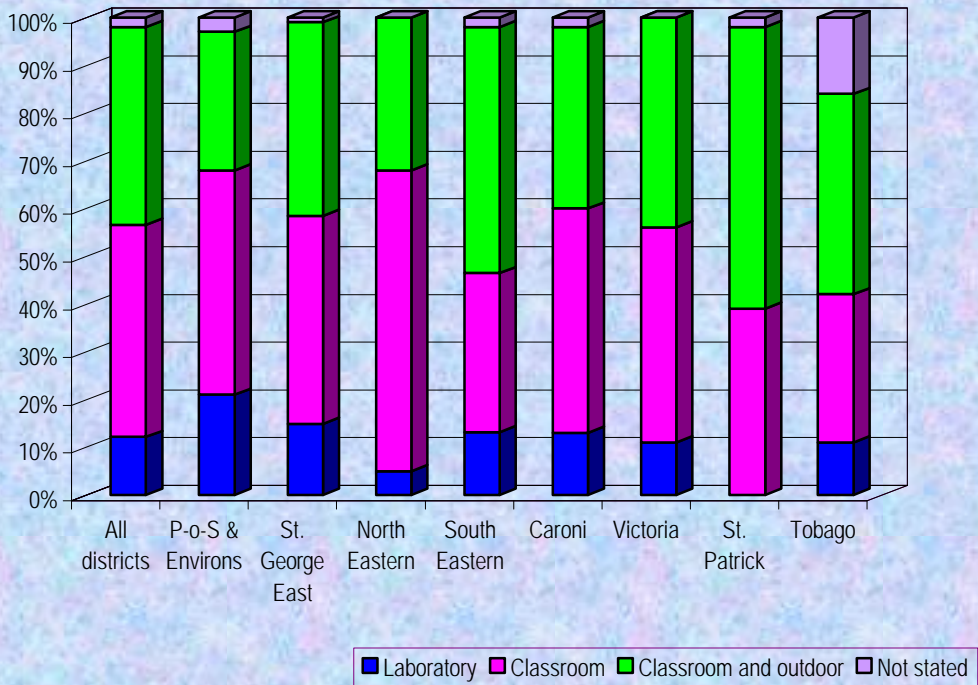
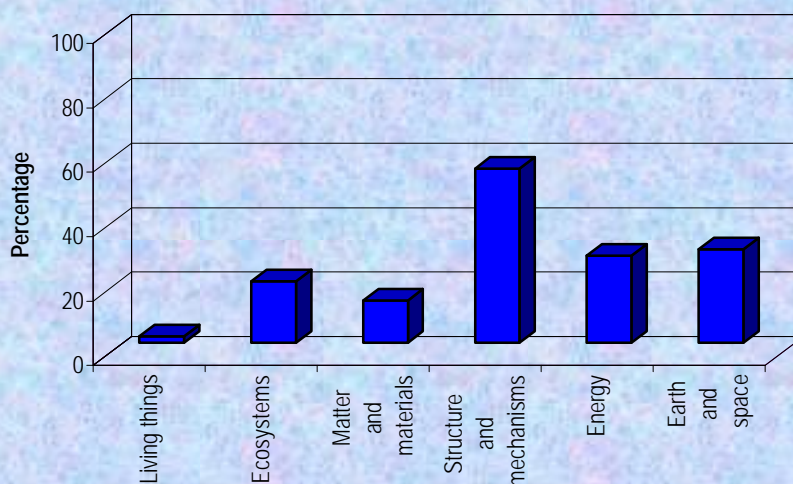


Table 41. Strands in Science Curriculum Most Difficult to Teach by Educational District

Educational district	Total teachers	Strand most difficult to teach - percentage of teachers					
		Living things	Ecosystems	Matter and materials	Structure and mechanisms	Energy	Earth and space
		(1)	(2)	(3)	(4)	(5)	(6)
All districts	820	2	19	13	54	27	29
P-o-S & Environs	135	2	19	13	54	27	29
St. George East	153	2	22	12	50	27	24
North Eastern	65	3	15	20	55	26	24
South Eastern	84	0	17	6	66	38	29
Caroni	104	1	23	12	49	31	30
Victoria	127	1	22	15	59	25	26
St. Patrick	97	2	14	13	52	24	38
Tobago	55	2	23	8	54	24	35

Chart 52. Strands Most Difficult to Teach - All Districts



By educational district (Table 41) and standard (Table 42), the majority of the teachers (54%) stated that structure and mechanisms was the most difficult strand to teach in the science syllabus, followed by earth and space (29%) and energy (27%).

Table 42. Strands in Science Curriculum Most Difficult to Teach by Standard

Standard	Total teachers	Strand most difficult to teach - percentage of teachers					
		Living things	Ecosystems	Matter and materials	Structure and mechanisms	Energy	Earth and space
	(1)	(2)	(3)	(4)	(5)	(6)	(7)
All standards	820	2	19	13	54	29	27
Standard 2	211	1	20	13	57	28	25
Standard 3	208	2	20	12	60	32	28
Standard 4	201	1	17	15	53	27	26
Standard 5	200	3	18	13	46	28	29

Chart 53. Strands Most Difficult to Teach by Standard - Percentage of Teachers

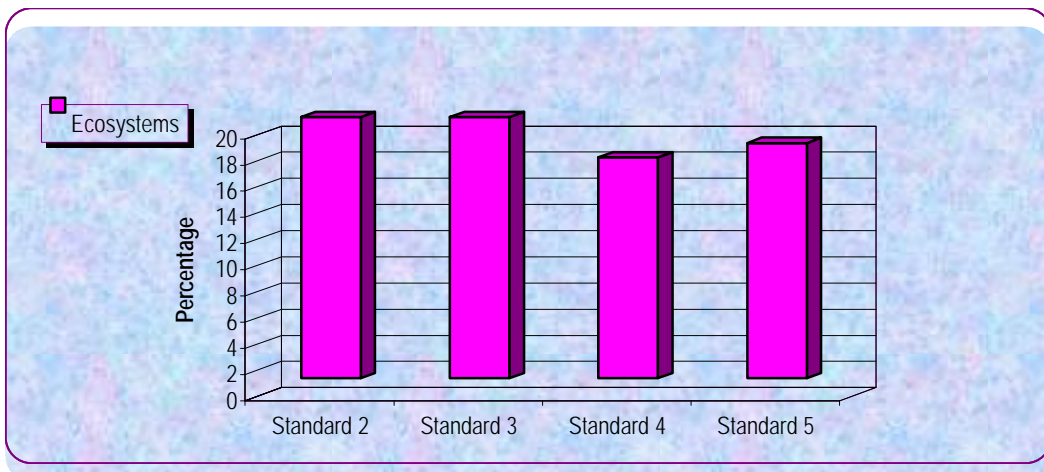
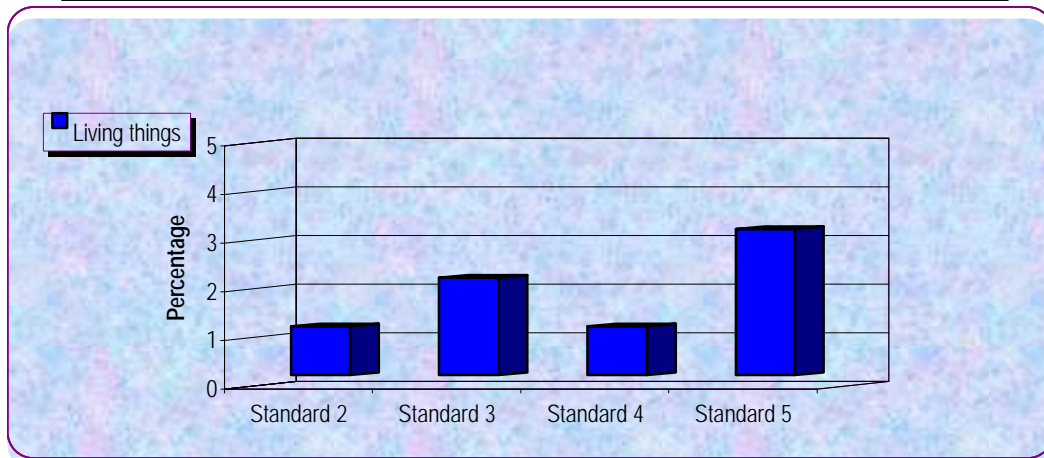


Chart 53. Strands Most Difficult to Teach by Standard - Percentage of Teachers (continued)

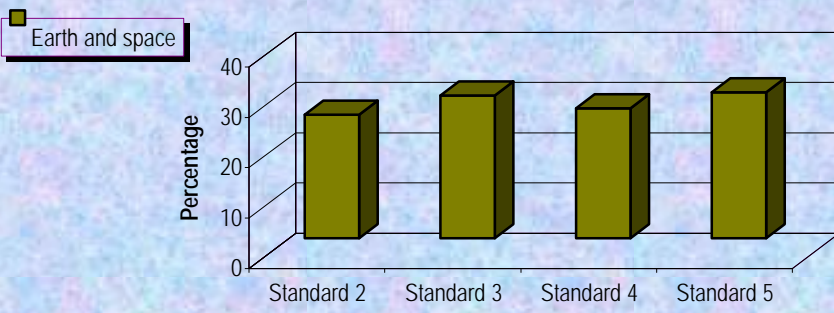
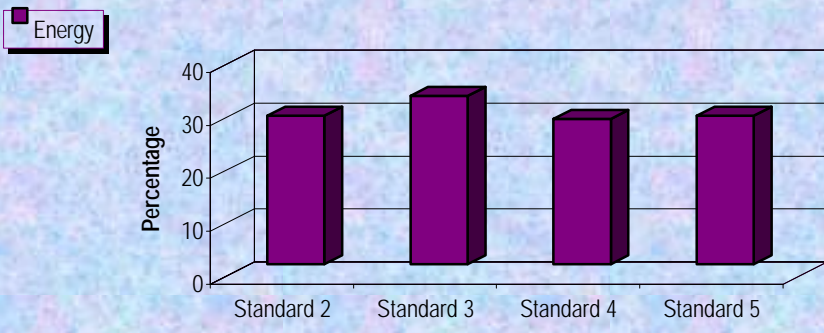
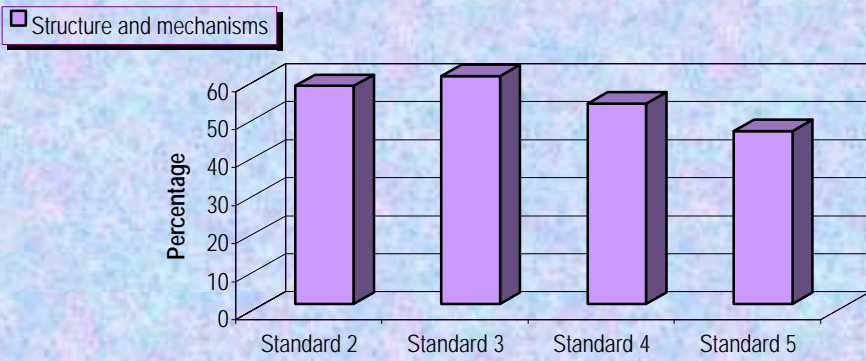
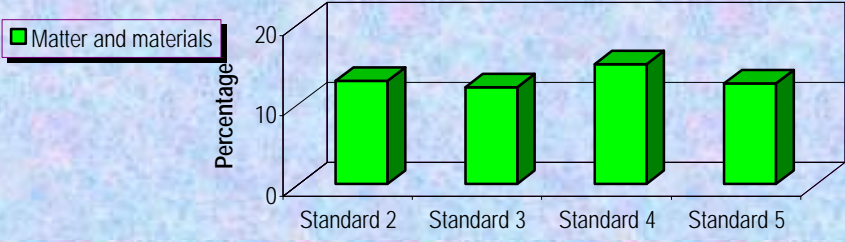
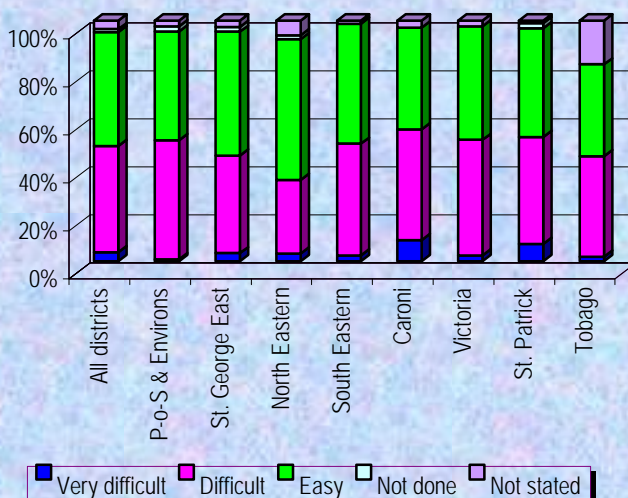


Table 43. Percentage Rating of Science by Level of Difficulty to Teach and Educational District

Educational district	Total	Rating of science by level of difficulty - percentage of teachers				
		Very difficult	Difficult	Easy	Not done	Not stated
	(1)	(2)	(3)	(4)	(5)	(6)
All districts	100	4	44	47	1	4
P-o-S & Environs	100	1	50	45	2	2
St. George East	100	3	41	52	2	3
North Eastern	100	3	31	58	2	6
South Eastern	100	2	46	50	0	1
Caroni	100	9	46	42	0	3
Victoria	100	2	48	47	0	2
St. Patrick	100	7	44	45	2	1
Tobago	100	2	42	38	0	18

Chart 54. Percentage Rating of Science by Level of Difficulty to Teach and Educational District

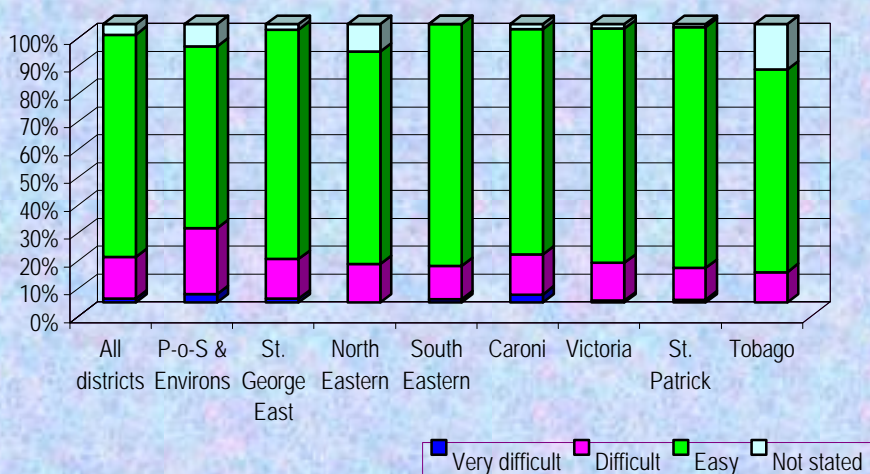


A similar percentage of all primary school teachers reported that science was easy to teach (47%) as it was difficult (48%) (Table 43). In urban P-o-S and Environs, 51% of the teachers stated that science was difficult to teach compared with 34% in the rural North Eastern educational district. Including all districts, less than 5% of the teachers indicated that science was very difficult to teach.

Table 44. Percentage Rating of Mathematics by Level of Difficulty to Teach and Educational District

Educational district	Total	Rating of Mathematics by level of difficulty - percentage of teachers			
		Very difficult	Difficult	Easy	Not stated
	(1)	(2)	(3)	(4)	(5)
All districts	100	1	15	80	4
P-o-S & Environs	100	3	24	65	8
St. George East	100	1	14	82	2
North Eastern	101	0	14	77	10
South Eastern	100	1	12	87	0
Caroni	100	3	14	81	2
Victoria	100	1	13	84	2
St. Patrick	100	1	11	87	1
Tobago	100	0	11	73	16

Chart 55. Percentage Rating of Mathematics by Level of Difficulty to Teach and Educational District

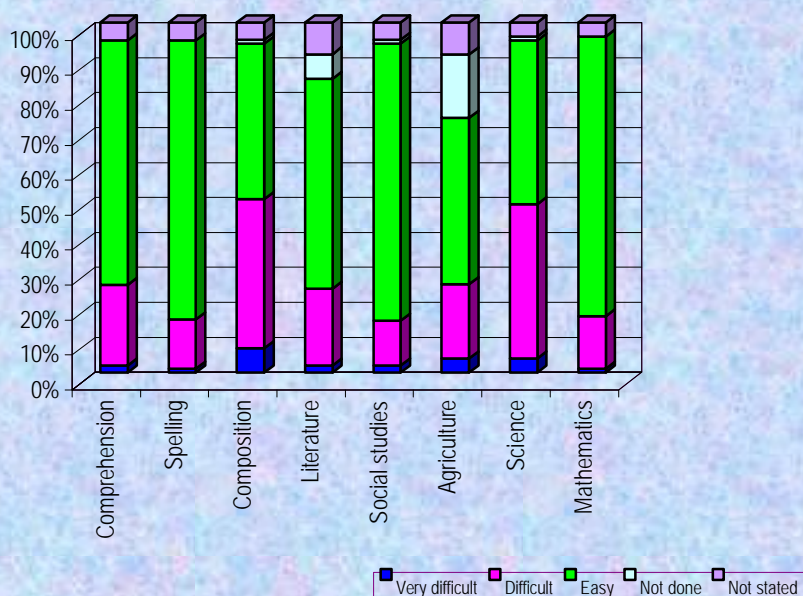


The survey data reveal that 80% of all teachers reported that Mathematics was easy to teach. However, a relatively large proportion of teachers (27%) in the educational district of P-o-S and Environs experienced difficulty in teaching Mathematics.

Table 45. Percentage Rating of Subject by Level of Difficulty to Teach

Subject	Total	Rating of subject by level of difficulty - percentage of teachers				
		Very difficult	Difficult	Easy	Not done	Not stated
	(1)	(2)	(3)	(4)	(5)	(6)
Comprehension	100	2	23	70	0	5
Spelling	100	1	14	79	0	5
Composition	100	7	43	45	1	5
Literature	100	2	22	60	7	9
Social studies	100	2	13	80	1	5
Agriculture	100	4	21	47	18	9
Science	100	4	44	47	1	4
Mathematics	100	1	15	80	0	4

Chart 56. Percentage Rating of Subject by Level of Difficulty to Teach



One half of the teachers experienced difficulty in teaching Science and Composition while a significant proportion indicated that Mathematics (80%), Social studies (80%), Spelling (79%) and Comprehension (70%) were easy to teach.

Table 46. Ranking of Methods by Effectiveness in Helping Student Understand Science

Method	Five-point scale					Not stated
	Most effective	—			least effective (%)	
	(1)	(2)	(3)	(4)	(5)	(6)
Through the use of textbook examples	6	16	35	27	14	3
Explanations given by the teacher	13	22	47	14	3	2
Experiments/demonstrations done by the teacher	24	44	16	9	5	2
Experiments done by the students	72	11	3	3	10	1

Experiments and demonstrations performed by both students and teachers were identified as effective in providing assistance in understanding science. Examples in textbook were least effective.

Table 47. Ranking of Areas Requiring Assistance

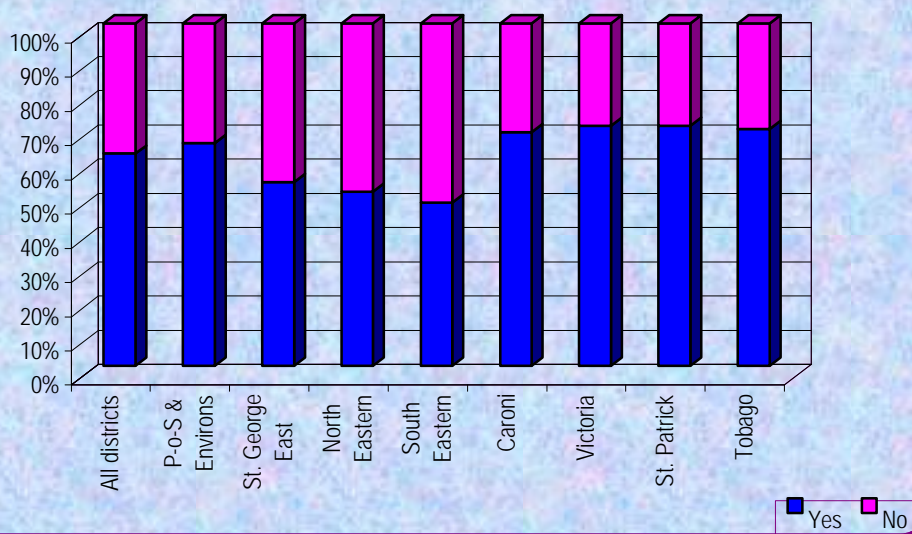
Area	Five-point scale					Not stated
	Most important	—			least important (%)	
	(1)	(2)	(3)	(4)	(5)	(6)
Explanations of scientific principles and concepts	26	18	17	18	12	9
Use of simple resources in performing science experiments	34	20	16	13	9	9
Methods of teaching science to the primary school age group	33	25	16	9	9	9
Improvement in instructional skills	21	25	22	15	6	10

More than 40% of the teachers stated that it was important that assistance be provided in each of the above areas of science education.

Table 48. Percentage of Teachers Attending Workshops by Educational District

Educational district	Workshop attended - percentage of teachers		
	Total	Yes	No
	(1)	(2)	(3)
All districts	100	62	38
P-o-S & Environs	100	65	35
St. George East	100	54	46
North Eastern	100	51	49
South Eastern	100	48	52
Caroni	100	68	32
Victoria	100	70	30
St. Patrick	100	70	30
Tobago	100	69	31

Chart 57. Percentage of Teachers Attending Workshops by Educational District



Approximately 50% and more of the teachers in each educational district had attended science workshops (Table 48) and 49% had attended one workshop in the last five years (Table 49). In each of the years 2002 and 2003, 29% of the teachers attended science workshops (Table 50).

Table 49. Number of Science Workshops Attended Last Five Years by Educational District

Educational district	No. of workshops attended in last five years - percentage of teachers						
	Total	0	1	2	3	4 or more	Not stated
	(1)	(2)	(3)	(4)	(5)	(6)	(7)
All districts	100	12	49	20	9	5	5
P-o-S & Environs	100	10	52	17	8	9	3
St. George East	100	30	43	12	6	0	9
North Eastern	100	9	39	27	6	12	6
South Eastern	100	8	70	13	5	3	3
Caroni	100	10	48	27	11	3	1
Victoria	100	10	51	22	11	4	1
St. Patrick	100	7	59	18	12	0	4
Tobago	100	5	29	26	13	13	13

**Chart 58. Number of Workshops Attended Last Five Years by Educational District
Percentage of Teachers**

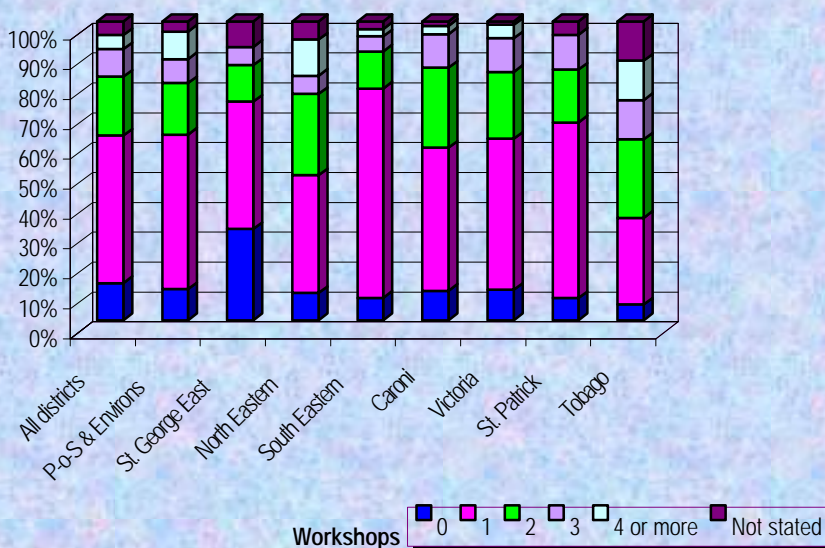


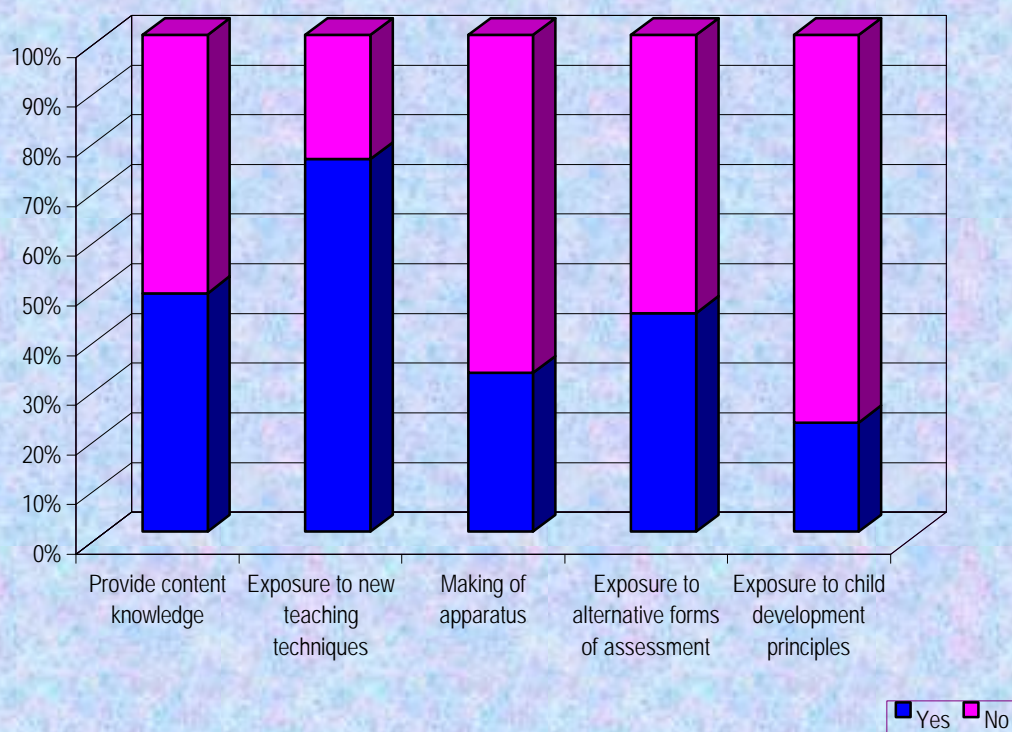
Table 50. Attendance at Last Workshop by Educational District

Educational district	Period last workshops attended - percentage of teachers							
	Total	Before 1995	1995-1999	2000	2001	2002	2003	Not stated
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
All districts	100	6	8	4	12	29	29	13
P-o-S & Environs	100	6	6	2	11	28	37	10
St. George East	100	10	11	9	10	22	11	28
North Eastern	100	3	6	3	12	27	33	15
South Eastern	100	8	8	3	8	48	18	10
Caroni	100	7	11	4	10	27	34	7
Victoria	100	4	9	3	19	21	34	9
St. Patrick	100	3	4	6	15	34	29	9
Tobago	100	0	3	3	3	39	34	18

Table 51. Benefits Derived from Workshops

Benefit	No. of teachers			Percentage		
	Total	Yes	No	Total	Yes	No
	(1)	(2)	(3)	(4)	(5)	(6)
Provide content knowledge	508	246	262	100	48	52
Exposure to new teaching techniques	508	380	128	100	75	25
Making of apparatus	508	162	346	100	32	68
Exposure to alternative forms of assessment	508	222	286	100	44	56
Exposure to child development principles	508	112	396	100	22	78

Chart 59. Benefit Derived from Workshops



By attending workshops most teachers (75%) benefited from exposure to new teaching techniques and 48% from the provision of content knowledge (Table 51). When applying the content of workshops, teachers experienced problems of materials, lack of time and accommodation to conduct experiments (Table 52). In addition, 85% and over of the teachers who attended workshops indicated that the topics were not applicable to the syllabus, or were not suited to the age group and the ideas were not simple enough.

Table 52. Problems Teachers Encounter when Applying the Content of Workshops

Problems	Percentage of teachers		
	Total	Yes	No
	(1)	(2)	(3)
Lack of time	100	41	59
Lack of materials	100	75	25
Topics applicable to syllabus	100	9	91
Topics suited to age group	100	12	88
Ideas simple enough	100	15	85
Disorder in the classroom	100	8	92
Place to conduct the experiment	100	51	49

Chart 60. Problems Teachers Encounter when Applying the Content of Workshops

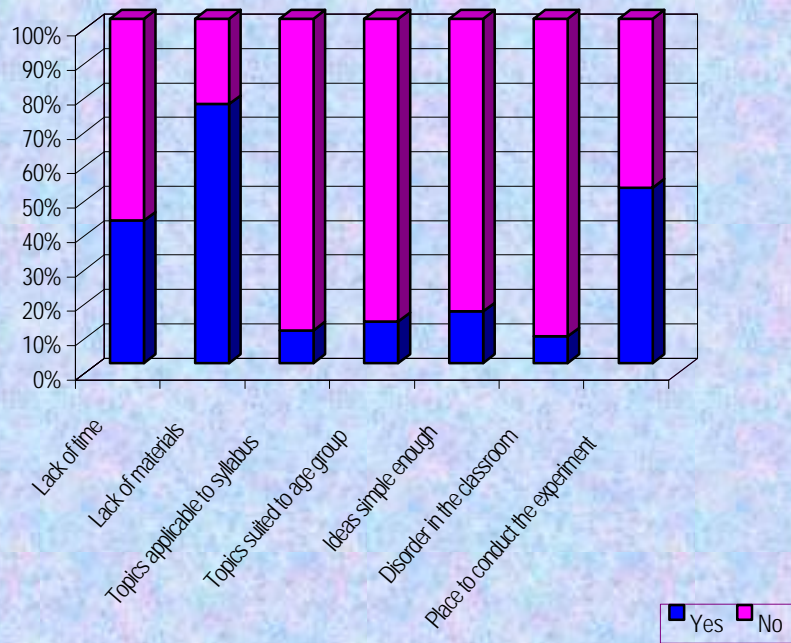


Table 53. Update Sessions/Reports on Workshops Held in Schools by Educational Districts

Educational district	Total	Update sessions/reports on workshops - percentage of teachers			
		Yes	No	Don't know	Not stated
	(1)	(2)	(3)	(4)	(5)
All districts	100	65	15	14	6
P-o-S & Environs	100	60	17	12	11
St. George East	100	61	16	19	4
North Eastern	100	51	12	28	9
South Eastern	100	64	12	15	8
Caroni	100	76	17	3	4
Victoria	100	77	12	9	2
St. Patrick	100	62	12	21	5
Tobago	100	62	15	13	11

Most schools held update sessions/reports for the benefit of teachers who did not attend workshops (Table 53). Teachers were equally divided on the frequency of workshops of either once a term or a year (Table 54) but 72% stated that workshops should be held during school time (Table 55).

Table 54. Frequency of Science Workshops

Frequency of workshop	No. of teachers	Percentage of teachers
	(1)	(2)
At least once a term	311	38
At least once a year	325	40
As the syllabus changes	179	22
Not necessary	2	0
Not stated	3	0

Table 55. Time Science Workshops Should be Held

Period	Total	Percentage of teachers		
		Yes	No	Not stated
	(1)	(2)	(3)	(4)
Easter vacation	100	6	91	2
July/August vacation	100	24	74	2
During school time	100	72	25	2
Saturdays	100	8	89	2

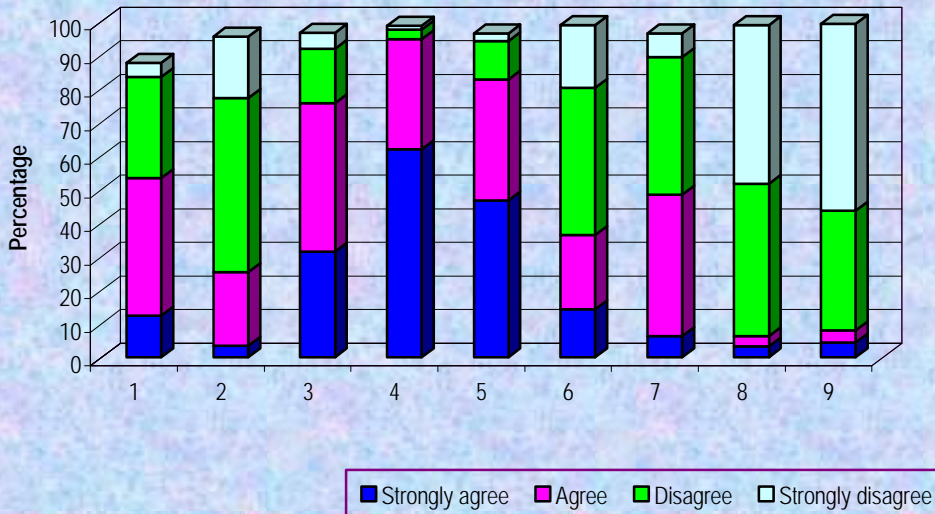
Table 56. Percentage of Teachers Agreeing/Disagreeing with Suggested Statements on Science Education

Statement	Four-point scale (%)				Agree
	Strongly agree	Agree	Disagree	Strongly disagree	
	(1)	(2)	(3)	(4)	(5)
1 Most primary school teachers generally have an inadequate background for the teaching of science	12	41	30	4	53
2 Most teachers have an insufficient understanding of how children learn	4	22	52	18	25
3 There is a lack of suitable science literature in my school	31	44	16	5	76
4 There should be at least one science resource teacher in each of the primary schools	62	33	3	1	95
5 Primary schools should operate like secondary schools, utilising teachers in specialised fields	47	36	11	2	83
6 Students need to learn to read and/or write before science can be successfully taught	14	22	44	19	36
7 Too often the class is intrigued by scientific demonstrations while not grasping the underlying principles	6	42	41	7	48
8 Students are not interested in science at the primary level	3	3	45	47	6
9 Science is of little importance at the primary level	4	4	36	55	8

Note: Percentage total 100 when Not Stated (not shown here) is included.

The survey results reveal a significant level of agreement amongst teachers on: (a) of at least one science resource teacher in each primary school (95%), (b) primary schools should operate like secondary schools, utilising teachers in specialised fields (83%) and (c) there is a lack of suitable science literature in my school (76%). Approximately, half of the teachers (53%) felt that they did not have an adequate background for the teaching of science. One third (36%) indicated that students need to learn to read and/or write before science can be successfully taught and only 8% agreed that science is of little importance at the primary level.

Chart 61. Percentage of Teachers Agreeing/Disagreeing with Suggested Statements on Science Education

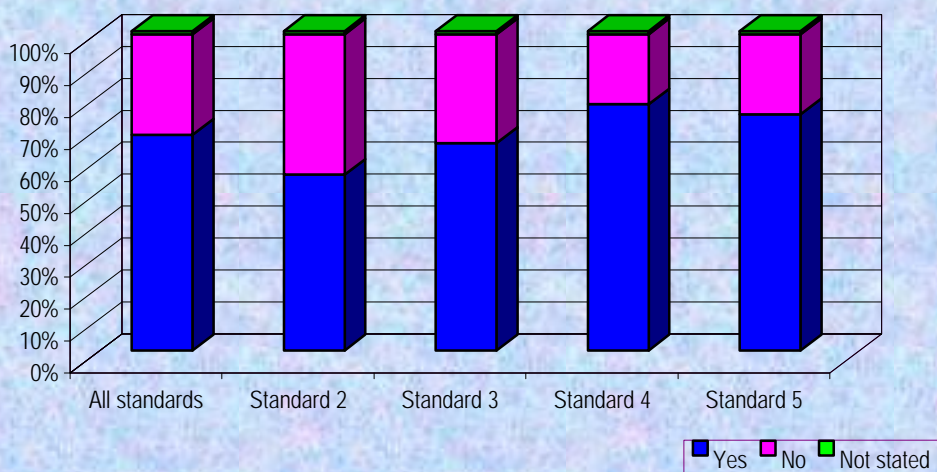


Note: Nos. 1 to 9, for statements see Table 56

Table 57. Less Emphasis/Interest by Teachers as Science is not Examinable in Secondary Entrance Assessment

Standard	Total	Less emphasis/interest - percentage of teachers		
		Yes	No	Not stated
	(1)	(2)	(3)	(5)
All standards	100	68	31	1
Standard 2	100	55	44	1
Standard 3	100	65	34	1
Standard 4	100	77	22	1
Standard 5	100	74	25	1

Chart 62. Less Emphasis/Interest as Science is not Examinable in S.E.A. - Percentage of Teachers



A substantial proportion of the teachers (68%) (Table 57) placed less emphasis/interest in science as it was discontinued in the Secondary Entrance Assessment (SEA) examination. One half of the teachers (49%) thought that students had also shown less interest in science (Table 58). The majority of teachers (59%) felt that science should be re-introduced in the SEA examination (Table 59).

Table 58. Less Emphasis/Interest by Students as Science is not Examinable in Secondary Entrance Assessment

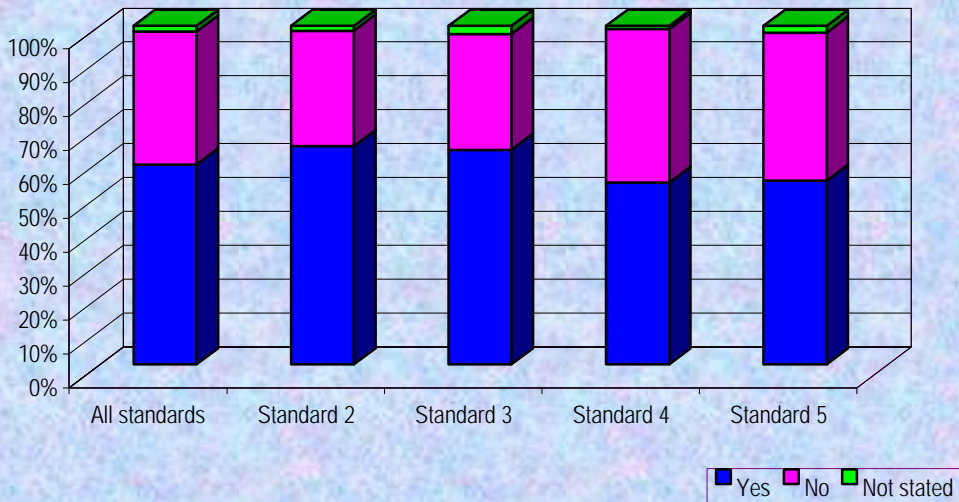
Standard	Total	Less emphasis/interest - percentage of students*		
		Yes	No	Not stated
	(1)	(2)	(3)	(5)
All standards	100	49	46	5
Standard 2	100	42	54	5
Standard 3	100	49	48	4
Standard 4	100	54	41	5
Standard 5	100	54	42	5

*as perceived by teachers

Table 59. Re-introduction of Science in Secondary Entrance Assessment

Standard	Total	Re-introduction of science in SEA - percentage of teachers		
		Yes	No	Not stated
	(1)	(2)	(3)	(5)
All standards	100	59	39	2
Standard 2	100	64	34	1
Standard 3	100	63	34	2
Standard 4	100	54	45	1
Standard 5	100	54	44	2

Chart 63. Re-introduction of Science in Secondary Entrance Assessment





National Institute of Higher Education, Research, Science and Technology (NIHERST)

Primary School Science Survey, 2003

Principal's Questionnaire

Name of School: _____

Address of School: _____

Phone Number: _____ Fax Number: _____

Principal's Data

Please indicate by a tick []

1. **Gender**

- 1 Male 2 Female

2. Which of the following subject(s) is/are included in your **O'Level/CXC** passes?

- | | |
|---|---|
| 1 Mathematics <input type="checkbox"/> | 6 Integrated Science <input type="checkbox"/> |
| 2 Computer Science <input type="checkbox"/> | 7 Human & Social Biology <input type="checkbox"/> |
| 3 Biology <input type="checkbox"/> | 8 Other Science _____ |
| 4 Chemistry <input type="checkbox"/> | (specify) |
| 5 Physics <input type="checkbox"/> | 9 No Sciences <input type="checkbox"/> |

3. Which of the following subject(s) is/are included in your **A'Level** passes?

- | | |
|---|--------------------------------------|
| 1 Mathematics <input type="checkbox"/> | 4 Chemistry <input type="checkbox"/> |
| 2 Computer Science <input type="checkbox"/> | 5 Physics <input type="checkbox"/> |
| 3 Biology <input type="checkbox"/> | 6 Other Science _____ |
| | (specify) |

4. 1 **Degree** (_____) 2 **Associate Degree** (_____)
Field of Study Field of Study

3 **Diploma** (_____)
Field of Study

5. **Professional Training**

- 1 Teacher's Diploma
- 2 Certificate in Education
- 3 Diploma in Education
- 4 B.Ed
- 5 M.Ed
- 6 Administrative Training
- 7 Other in-service courses (specify):
- _____
- _____

Elective/Specialisation (if any)

6. No. of students enrolled in school: Male Female

7. Does your school have a science room? 1 Yes Go to Q. 8 2 No Skip to Q. 9
8. Do you think that it is well equipped? 1 Yes 2 No
9. Which of the following equipment/facility is available in your school?
- | | |
|--|--|
| 1 Photocopier <input type="checkbox"/> | 6 Television set <input type="checkbox"/> |
| 2 Stencil machine <input type="checkbox"/> | 7 Video cassette recorder <input type="checkbox"/> |
| 3 Projector (overhead or slide) <input type="checkbox"/> | 8 Cassette player <input type="checkbox"/> |
| 4 Computer <input type="checkbox"/> | 9 Other (specify): _____ <input type="checkbox"/> |
| How many (computers) <input style="width: 50px; height: 20px;" type="text"/> | |
| 5 Internet Access <input type="checkbox"/> | |
10. Does your school have adequate science resource materials available to the teachers?
- 1 Yes 2 No
11. No. of teachers on staff?
- 1 Male 2 Female
12. No. of teachers that teach science from Standards II to V.
- | Standard | No. of Teachers |
|----------|---|
| II | <input style="width: 50px; height: 20px;" type="text"/> |
| III | <input style="width: 50px; height: 20px;" type="text"/> |
| IV | <input style="width: 50px; height: 20px;" type="text"/> |
| V | <input style="width: 50px; height: 20px;" type="text"/> |
13. No. of teachers on staff with professional qualifications.
- | Professional Qualification | No. of Teachers |
|-----------------------------|---|
| 1. Teacher's Diploma | <input style="width: 50px; height: 20px;" type="text"/> |
| 2. Certificate in Education | <input style="width: 50px; height: 20px;" type="text"/> |
| 3. Diploma in Education | <input style="width: 50px; height: 20px;" type="text"/> |
| 4. B.Ed | <input style="width: 50px; height: 20px;" type="text"/> |
| 5. M.Ed | <input style="width: 50px; height: 20px;" type="text"/> |
14. What areas do you think should be considered priority in science education?
- | | |
|---|---------------------------------------|
| 1. Content <input type="checkbox"/> | 5. Attitudes <input type="checkbox"/> |
| 2. Problem Solving <input type="checkbox"/> | 6. Other <input type="checkbox"/> |
| 3. Science processes <input type="checkbox"/> | _____ <input type="checkbox"/> |
| 4. Teaching Methods <input type="checkbox"/> | (specify) |
15. What areas should be emphasized with respect to Teacher Development?
- _____
- _____
- _____

National Institute of Higher Education, Research, Science and Technology (NIHERST)

**Primary School Science Survey, 2003
Teacher's Questionnaire**

Name of School: _____

Name of Teacher: (Optional) _____

Standard/Class: _____

Teacher's Data

Please indicate by a tick []

1. **Gender**

1 Male <input type="checkbox"/>	2 Female <input type="checkbox"/>
---------------------------------	-----------------------------------

2. Which of the following subject(s) is/are included in your **O'Level/CXC** passes?

1 Mathematics <input type="checkbox"/>	5 Physics <input type="checkbox"/>
2 Computer Science <input type="checkbox"/>	6 Integrated Science <input type="checkbox"/>
3 Biology <input type="checkbox"/>	7 Human & Social Biology <input type="checkbox"/>
4 Chemistry <input type="checkbox"/>	8 Other Science: _____ <input type="checkbox"/> (specify)

3. Which of the following subject(s) is/are included in your **A'Level** passes?

1 Mathematics <input type="checkbox"/>	4 Chemistry <input type="checkbox"/>
2 Computer Science <input type="checkbox"/>	5 Physics <input type="checkbox"/>
3 Biology <input type="checkbox"/>	6 Other Science: _____ <input type="checkbox"/> (specify)

5. 1 **Degree** (_____) 2 **Associate Degree** (_____)
Field of Study Field of Study

- 3 **Diploma** (_____)
Field of Study

5. **Professional Training**

1 Teacher's Diploma <input type="checkbox"/>	Elective/Specialisation (if any)
3 Diploma in Education <input type="checkbox"/>	_____
4 B.Ed <input type="checkbox"/>	_____
5 M.Ed <input type="checkbox"/>	_____
6. Other (specify): <input type="checkbox"/>	_____

6. How long have you been teaching at the Primary school level? Years
(including current year)

7. Number of students in your class: Male Female

8. How would you describe the Science textbooks available to your students?
 1 Very Adequate 2 Adequate 3 Inadequate

9. In what way(s) do you think these texts can be improved:

- | | | | | | |
|---|---|--------------------------|---|----------------------------|--------------------------|
| 1 | Better quality illustrations/print | <input type="checkbox"/> | 4 | In agreement with syllabus | <input type="checkbox"/> |
| 2 | More activities/assessment exercises | <input type="checkbox"/> | 5 | Other _____ | <input type="checkbox"/> |
| 3 | Graded approach in terms of age group/ability | <input type="checkbox"/> | | (specify) | |

10. Where do you conduct experiments?

- | | | | | | |
|---|--------------------|--------------------------|---|-------------|--------------------------|
| 1 | Classroom | <input type="checkbox"/> | 3 | Outdoor | <input type="checkbox"/> |
| 2 | Science Laboratory | <input type="checkbox"/> | 4 | Other _____ | <input type="checkbox"/> |
| | | | | (specify) | |

11. Tick strands in the Science curriculum that are most difficult to teach:

- | | | | | | |
|---|----------------------|--------------------------|---|--------------------------|--------------------------|
| 1 | Living things | <input type="checkbox"/> | 4 | Structure and Mechanisms | <input type="checkbox"/> |
| 2 | Eco System | <input type="checkbox"/> | 5 | Earth and Space | <input type="checkbox"/> |
| 3 | Matter and materials | <input type="checkbox"/> | 6 | Energy | <input type="checkbox"/> |

12. Rate each of the following according to their level of difficulty to teach.

	Very Difficult	Difficult	Easy	Not Done
Language Arts:				
Comprehension	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Spelling & Dictation	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Composition	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Literature	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Agriculture	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Science	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Mathematics	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Social Studies	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

13. Have you ever attended any Science workshop?

- 1 Yes Go to Q14 2 No Skip to Q18

14. How many Science workshops have you attended in the last five years (1998 to present)?

15. Give the date of the last Science workshop you attended.

Year

16. In what way(s) was/were the workshop(s) beneficial to you?
(You may give more than one reply)

- | | | |
|---|---|--------------------------|
| 1 | Provided content knowledge | <input type="checkbox"/> |
| 2 | Exposure to new teaching techniques | <input type="checkbox"/> |
| 3 | Making of apparatus | <input type="checkbox"/> |
| 4 | Exposure to alternative forms of assessment | <input type="checkbox"/> |
| 5 | Exposure to child development principles | <input type="checkbox"/> |
| 6 | Other (specify): | <input type="checkbox"/> |

17. What problems do you encounter when you try to apply what was covered in the workshop?

- | | | | |
|---|--|----------------------------|--|
| 1 | <input type="checkbox"/> Lack of time | <input type="checkbox"/> 5 | Ideas not simple enough |
| 2 | <input type="checkbox"/> Lack of materials | <input type="checkbox"/> 6 | Disorder in the classroom |
| 3 | <input type="checkbox"/> Topics not applicable to syllabus | <input type="checkbox"/> 7 | No place to conduct experiments successfully |
| 4 | <input type="checkbox"/> Topics not suited to age group | <input type="checkbox"/> 8 | Other (specify): |

18. Are there update sessions/reports on workshops attended by some teachers for the information of those who did not attend?

- 1 Yes 2 No 3 Don't know

19. How often do you think Science workshops should be held?

- | | | | |
|---|--|----------------------------|----------------------|
| 1 | <input type="checkbox"/> At least once a term | <input type="checkbox"/> 3 | At least once a year |
| 2 | <input type="checkbox"/> As the syllabus changes | <input type="checkbox"/> 4 | Not necessary |

20. When do you think Science workshops should be held?

(You may give more than one reply)

- | | | | |
|---|---|----------------------------|----------------------|
| 1 | <input type="checkbox"/> July/August vacation | <input type="checkbox"/> 4 | Easter vacation |
| 2 | <input type="checkbox"/> During school time | <input type="checkbox"/> 5 | |
| | Other(specify): <input type="checkbox"/> | | <input type="text"/> |
| 3 | <input type="checkbox"/> Saturdays | <input type="checkbox"/> | <input type="text"/> |

21. Rank the following methods according to their relative effectiveness in students to understand Science:

(Use the scale 1 – 5 where: 1 = most effective and 5 = least effective)

- | | | | |
|---|--|----------------------|--------------|
| 1 | Through the use of textbook examples | <input type="text"/> | helping your |
| 2 | Explanations given by the teacher | <input type="text"/> | |
| 3 | Experiments/demonstrations done by the teacher | <input type="text"/> | |
| 4 | Experiments done by the students | <input type="text"/> | |
| 5 | Other (Specify): | <input type="text"/> | |

22. Rank the following areas in which you would like assistance.

(Use the scale 1 – 5 where: 1 = most important and 5 = least important)

- | | | |
|---|---|----------------------|
| 1 | Explanation of scientific principles and concepts | <input type="text"/> |
| 2 | The use of simple resources in performing Science experiments | <input type="text"/> |
| 3 | Methods of teaching Science to the primary school age groups | <input type="text"/> |
| 4 | Improvement in instructional skills | <input type="text"/> |
| 5 | Other (Specify): | <input type="text"/> |

23. Tick to indicate whether you agree or disagree with the following statements. (Reply to all)

	Strongly Agree	Agree	Disagree	Strongly Disagree	Don't know
• Most primary school teachers generally have an inadequate background for the teaching of Science.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
• Most teachers have an insufficient understanding of how children learn.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
• There is a lack of suitable Science literature in my school.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
• There should be at least one Science Resource teacher in each of the primary schools.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
• Primary schools should operate like secondary schools, utilising teachers in specialised fields.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
• Students need to learn to read and/or write before Science can be successfully taught.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
• Too often the class is intrigued by scientific demonstrations while not grasping the underlying principles.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
• Students are not interested in Science at the primary level.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
• Science is of little importance at the primary level.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

24. Since science is not an examinable subject at SEA, do you think less emphasis/interest is given to the subject by:

1	Teachers:	1	Yes	<input type="checkbox"/>	2	No
<input type="checkbox"/>						
2	Students:	1	Yes	<input type="checkbox"/>	2	No
<input type="checkbox"/>						

25. Should science be re-introduced as an examinable subject in SEA?

1	Yes	<input type="checkbox"/>	2	No	<input type="checkbox"/>
---	-----	--------------------------	---	----	--------------------------