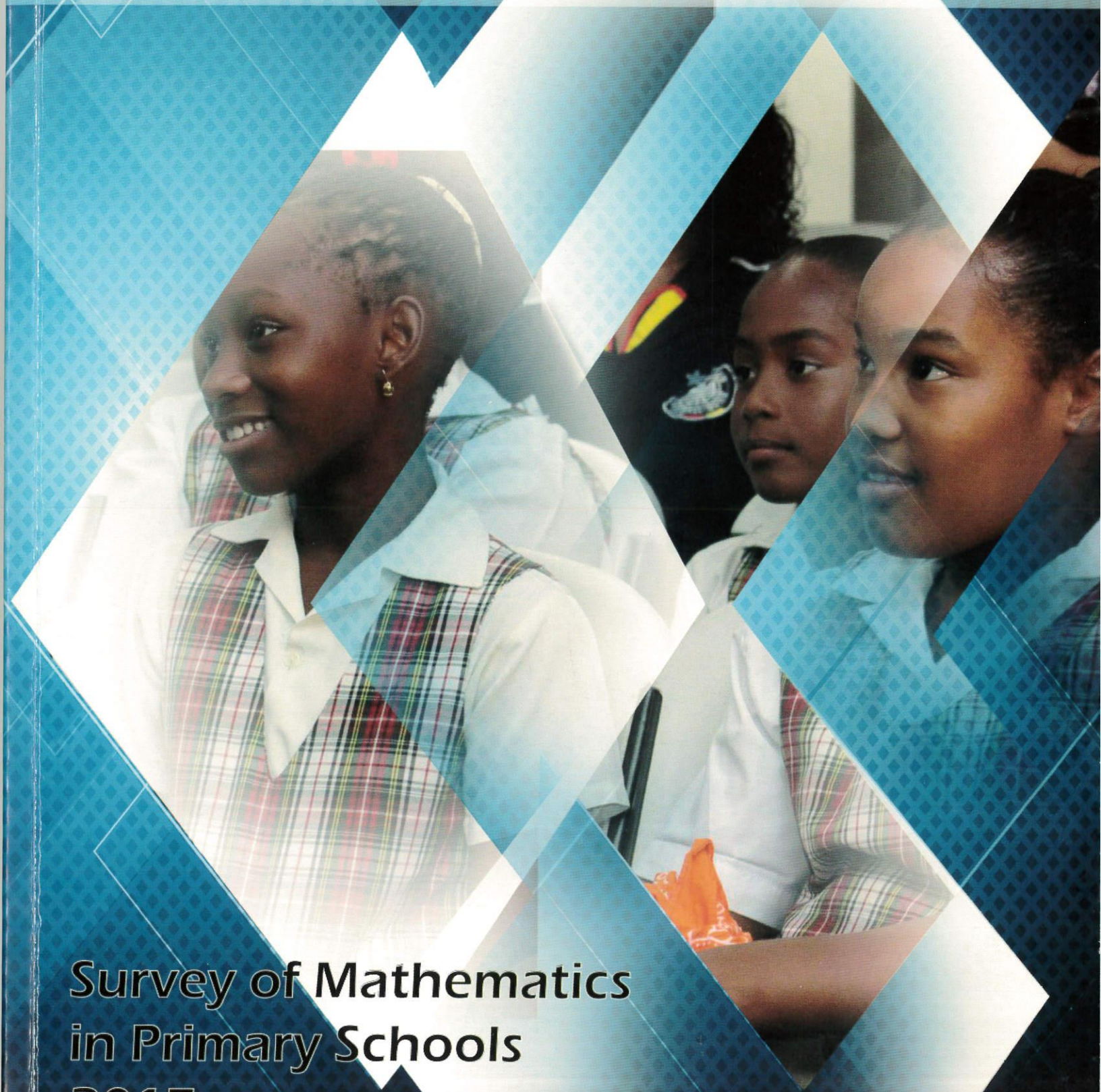
The Government of the Republic of Trinidad and Tobago

Ministry of Education

NIHERST



Survey of Mathematics in Primary Schools 2017

Science and Technology
Statistical Unit
NIHERST
Level 13
Education Tower A
5 St. Vincent Street
Port of Spain
Trinidad and Tobago
Tel: 868-625-6437
Fax: 868-627-8272
E-mail: stresearch@niherst.gov.tt
Website: http://niherst.gov.tt

Foreword

Mathematics education is a fundamental area of learning in all education systems and it impacts directly on the numeracy level of the population. Mathematics exposes children to knowledge, skills and critical thinking strategies that are necessary for everyday life and provides the basis for the learning of other disciplines. Mathematics taught at an early age provides the foundation children need to succeed academically and to function effectively in their environment.

The National Institute of Higher Education, Research, Science and Technology (NIHERST) presents the results of the Survey of Mathematics in Primary Schools, 2017. This survey was designed to provide empirical data on the teaching of Mathematics in primary schools and has generated essential data on indicators for comparison with similar studies. The 2017 survey is a follow-up to a similar study conducted by NIHERST in 2007.

The Survey of Mathematics in Primary Schools, 2017 is a two-part enquiry of principals and teachers from 264 government, government-assisted and private primary schools in Trinidad and Tobago. The survey provides essential data on the profile of primary school teachers, their training needs, their attitudes towards teaching and difficulties encountered in teaching Mathematics as well as the adequacy and availability of teaching resources and the use of teaching and evaluation methods. Additionally, the survey includes a profile of primary schools principals and their views on primary Mathematics education.

This publication should serve as a useful resource for decision-makers, curriculum specialists, researchers, teaching personnel and, in general, stakeholders in Mathematics education.

NIHERST wishes to thank the Ministry of Education, Trinidad and the Tobago House of Assembly – Department of Education for approving the conduct of this study in primary schools. We also acknowledge the co-operation of principals and teachers in the government, government-assisted and private schools who willingly provided the data collated in this report.

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Sylvia Lalla
Ag. President

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INTRODUCTION

The study focused on the quality of teaching, availability and adequacy of resources and areas of difficulty in teaching and understanding Mathematics by monitoring:

- teachers' qualifications and development needs;
- teachers' attitudes towards teaching;
- adequacy and use of teaching materials and textbooks;
- areas of difficulty – teaching and understanding;
- teaching methods;
- assessment methods; and
- issues that limit the teaching of Mathematics.

METHODOLOGY

Coverage

The frame for the study was obtained from the Ministry of Education. It contained a total of 528 public and private secondary schools in Trinidad and Tobago. Of the 528 schools, 11 private schools were removed from the survey frame because they could not be contacted/vacant or were no longer in operation. A 50% sample of 257 was selected from the 517 public and private primary schools. Of the 257 secondary schools surveyed, 249 responded, representing a 97% response rate. In addition, no teacher's questionnaire was received from one of the participating schools. Tables A, B, C and D show the number of schools surveyed and response rate by educational district, type of school and class level.

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

Educational district	Total	Type of school		
		Government	Government-assisted	Private
All districts	**257**	**70**	**170**	**17**
St. George West	**54**	17	32	5
St. George East	**38**	11	21	6
St. Andrew/St. David	**20**	5	15	0
Nariva/Mayaro	**11**	2	9	0
Caroni	**35**	10	24	1
Victoria	**52**	10	39	3
St. Patrick	**28**	9	19	0
Tobago	**19**	6	11	2

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

Educational district	Total	Type of school		
		Government	Government-assisted	Private
All districts	**249**	**68**	**168**	**13**
St. George West	**49**	16	30	3
St. George East	**37**	11	21	5
St. Andrew/St. David	**19**	4	15	0
Nariva/Mayaro	**11**	2	9	0
Caroni	**35**	10	24	1
Victoria	**52**	10	39	3
St. Patrick	**28**	9	19	0
Tobago	**18**	6	11	1

Table C: Percentage of Schools Responded by Educational District and Type of School

Educational district	Total	Type of school		
		Government	Government-assisted	Private
All districts	**97**	**97**	**99**	**76**
St. George West	**91**	94	94	60
St. George East	**97**	100	100	83
St. Andrew/St. David	**95**	80	100	0
Nariva/Mayaro	**100**	100	100	0
Caroni	**100**	100	100	100
Victoria	**100**	100	100	100
St. Patrick	**100**	100	100	0
Tobago	**95**	100	100	50

Table D: No. of Schools Surveyed by Class Level and Type of School

Standard	Total	Type of school		
		Government	Government-assisted	Private
All standards	**257**	**70**	**170**	**17**
1	**52**	14	34	4
2	**52**	14	34	4
3	**51**	14	34	3
4	**51**	14	34	3
5	**51**	14	34	3

Sample Design

All schools were stratified by educational district and type of school as shown in Table A in the coverage. Three strata were obtained. The following procedure was then adopted in selecting the form as the sampling unit: commencing with stratum one, Standard 1 was selected from the first listed school, Standard 2 from the second school and similarly for Standards 3, 4 and 5 from the next consecutive schools. This process was repeated until the schools in the stratum were exhausted. The procedure for selecting the forms from the subsequent strata was similar to that described for stratum one. The principal and a teacher of the selected standard were surveyed in each school. Through this selection process, a representative sample of two hundred and forty-nine (249) principals and two hundred and forty-eight teachers (248) from public and private primary schools responded to the enquiry.

Data Collection

Two survey questionnaires, one for principals and another for teachers of the selected forms, were designed to achieve the underlying objectives and a pilot study was conducted. The final questionnaires, used for data collection in this survey, were then delivered to each school and subsequently monitored by a group of experienced interviewers. Data collection commenced in February 2017 and was completed by May 2017.

Data Processing

As completed questionnaires were received, data were edited for consistency and omissions. In the areas, where discrepancies were identified, questionnaires were returned to the field for verification and correction as necessary. Edited data were then captured in the Statistical Package for the Social Sciences (SPSS) version 22 software which was used to produce the tabulations in this report.

Results

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

Acronyms and Abbreviations

CXC – Caribbean Examinations Council

CSEC – Caribbean Secondary Education Certificate

CAPE – Caribbean Advanced Proficiency Examination

Table 1: Distribution of Principals by Educational District and Gender

Educational district	Gender - distribution of principals					
	Total		Male		Female	
	No.	Percentage	No.	Percentage	No.	Percentage
	(1)	(2)	(3)	(4)	(5)	(6)
All districts	249	100	77	31	172	69
St. George West	49	100	15	31	34	69
St. George East	37	100	12	32	25	68
Victoria	52	100	22	42	30	58
Caroni	35	100	7	20	28	80
St. Patrick	28	100	9	32	19	68
North Eastern	19	100	2	11	17	89
South Eastern	11	100	6	55	5	45
Tobago	18	100	4	22	14	78

Table 1 shows the distribution of primary school principals who participated in the survey by educational district and type of school. Of the total sample of principals, 31% were males and 69% were females, representing a 1:2.2 male to female ratio. A review of the data by educational district reveals that the North Eastern district, which comprised of 11% males to 89% females or a 1:8.5 ratio, recorded the largest gender disparity while the lowest was observed in the South Eastern district with 55% male to 45% female principals or a 1.2:1 ratio (Table 1). By type of school, females out-numbered their male counterparts in all types of schools especially in private primary schools where 92% of the principals were females compared to males (8%) (Table 2).

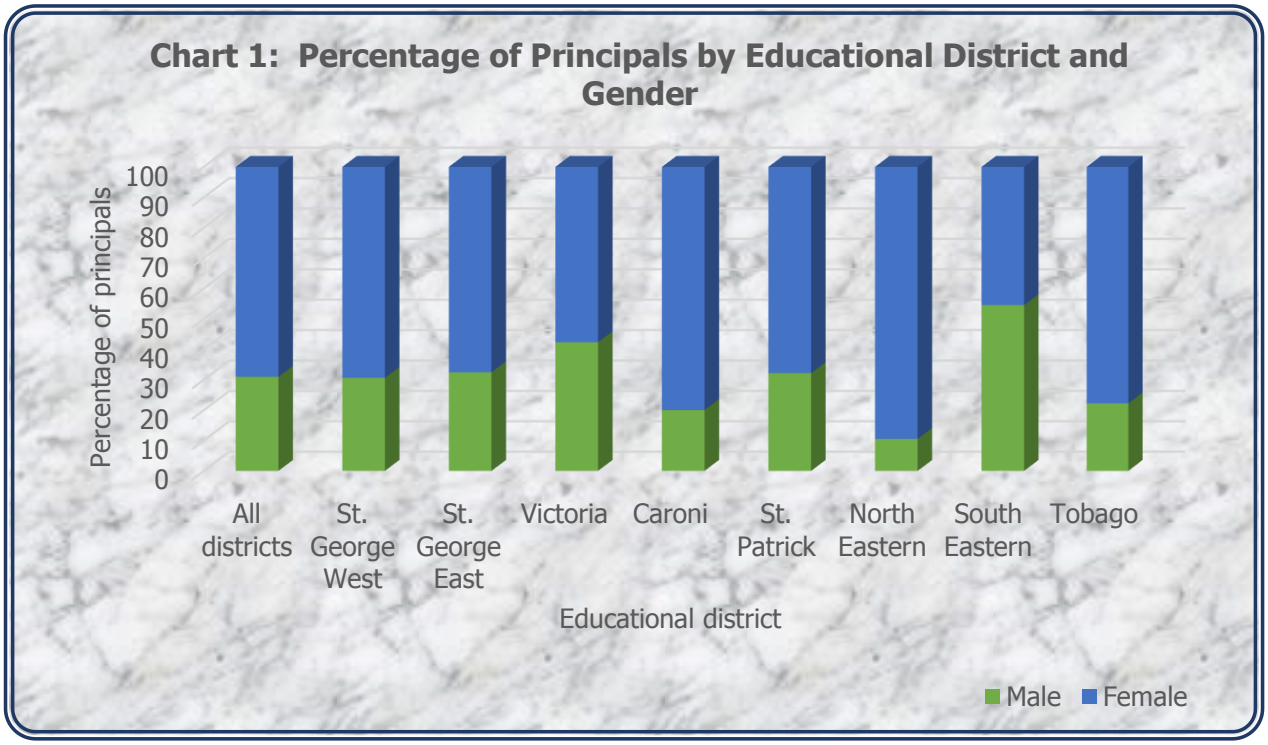


Table 2: Percentage of Principals by Type of School and Gender

Type of school	Gender - percentage of principals		
	Total	Male	Female
	(1)	(2)	(3)
All schools	100	31	69
Government	100	31	69
Government-assisted	100	33	67
Private	100	8	92

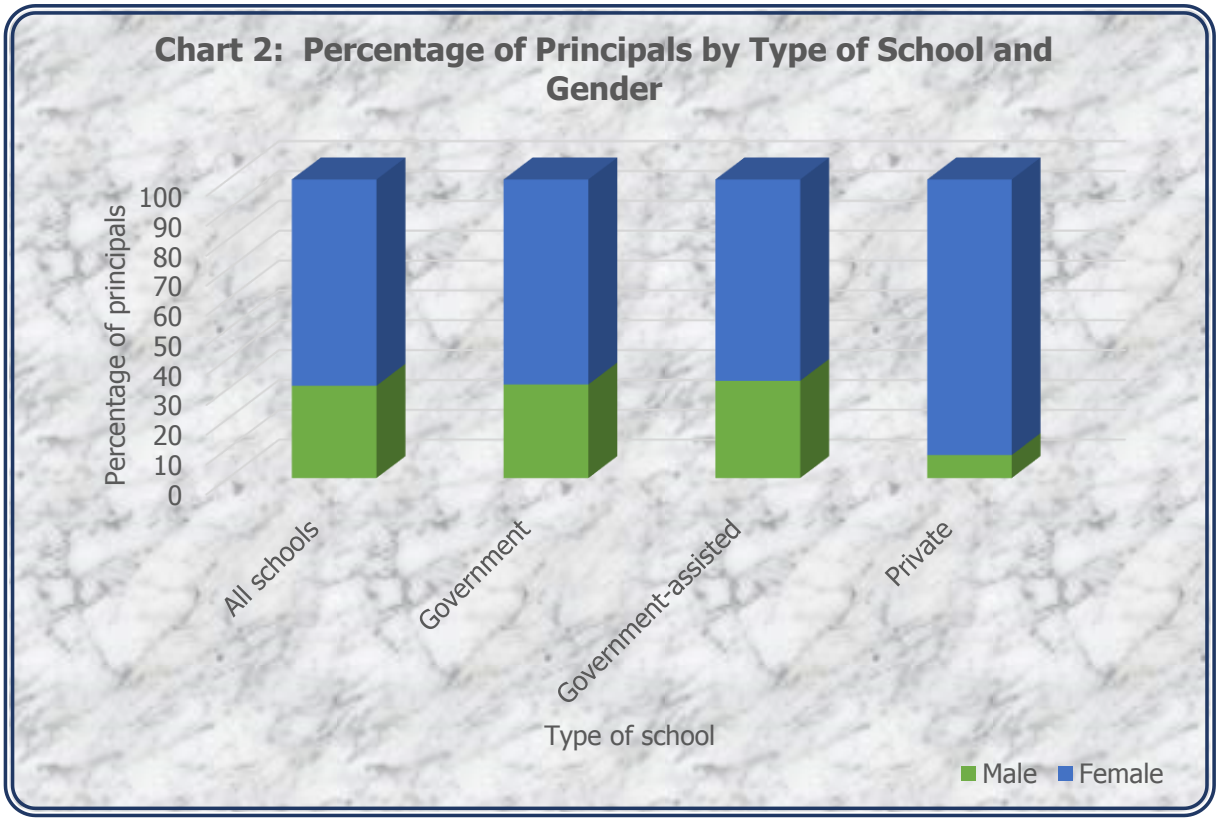


Table 3: Percentage of Principals by Educational District and Age

Educational district	Age group (years) - percentage of principals				
	Total	30-39	40-49	50-59	60 and over
	(1)	(2)	(3)	(4)	(5)
All districts	100	4	45	50	2
St. George West	100	2	39	57	2
St. George East	100	5	46	46	3
Victoria	100	4	54	38	4
Caroni	100	3	54	43	0
St. Patrick	100	4	39	57	0
North Eastern	100	0	42	58	0
South Eastern	100	9	9	82	0
Tobago	100	6	44	44	6

In terms of age distribution, the largest percentage (50%) of principals, especially in the South Eastern district (82%), was observed in the 50 - 59 age group, followed by 45% in the 40 - 49 age cohort (Table 3). By type of school, the modal age of principals in government (61%) and private (38%) primary schools was between 50 - 59 years while a half (50%) of the principals in government-assisted schools was between 40 - 49 years of age (Table 4).

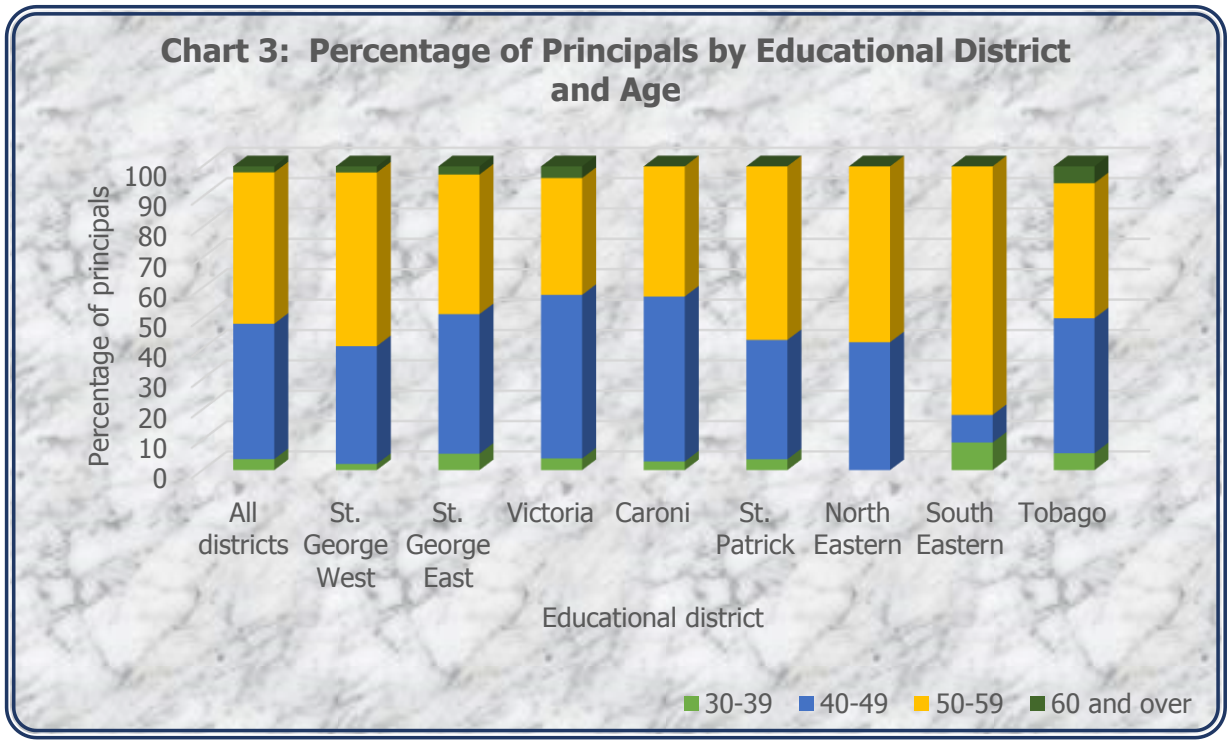


Table 4: Percentage of Principals by Type of School and Age

Type of school	Age group (years) - percentage of principals				
	Total	30-39	40-49	50-59	60 and over
	(1)	(2)	(3)	(4)	(5)
All schools	100	4	45	50	2
Government	100	2	37	61	0
Government-assisted	100	4	50	46	1
Private	100	15	15	39	31

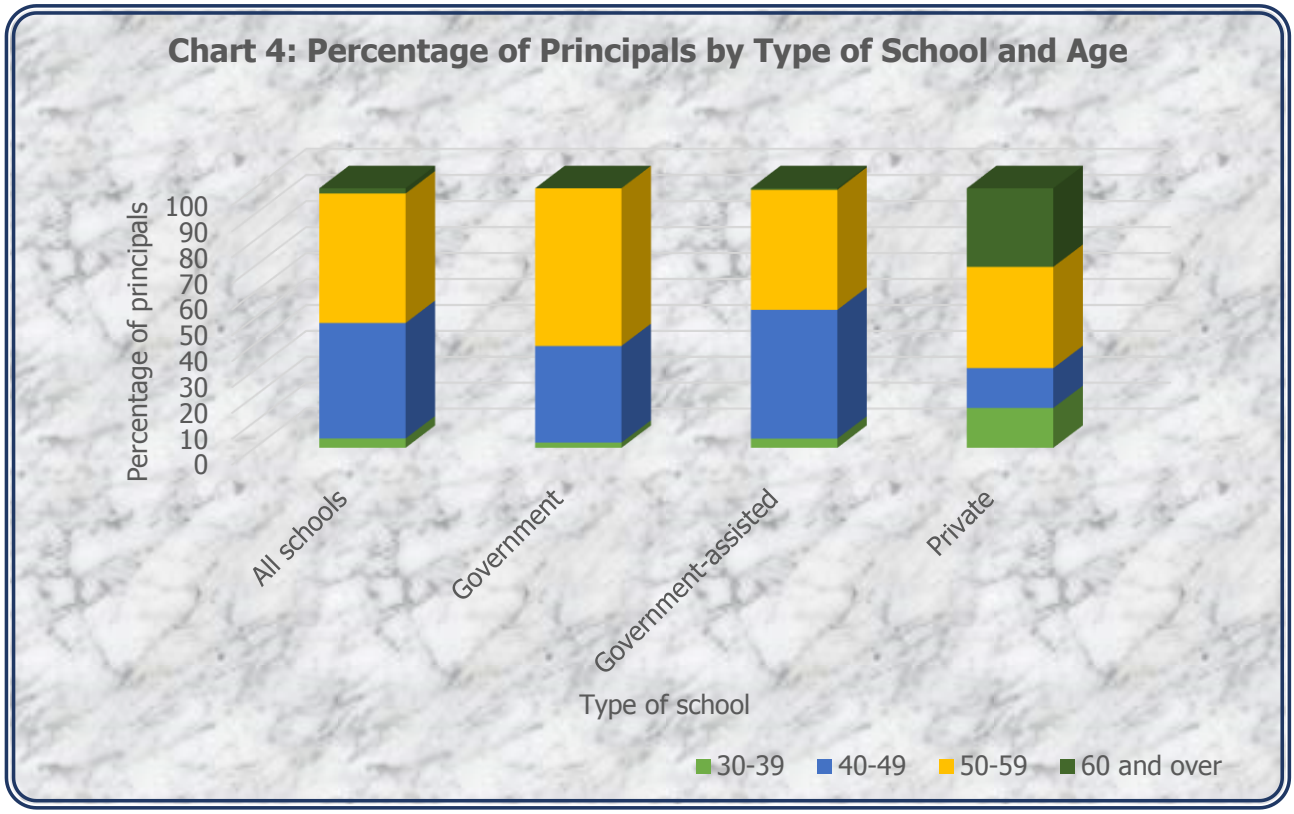


Table 5: Percentage of Principals by Educational District and Highest Level of Education

Educational district	Highest level of education - percentage of principals					
	Total	CSEC/ O Levels	CAPE/ A Levels	Associate degree	Bachelor's degree	Master's degree and above
	(1)	(2)	(3)	(4)	(5)	(6)
All districts	100	5	2	1	59	32
St. George West	100	6	2	0	57	35
St. George East	100	0	3	0	51	46
Victoria	100	8	4	0	56	33
Caroni	100	0	0	0	69	31
St. Patrick	100	7	0	4	79	11
North Eastern	100	11	5	0	53	32
South Eastern	100	18	9	9	55	9
Tobago	100	0	0	0	56	44

A significant majority (91%) of the principals reported the attainment of a university degree as their highest level of education. Approximately three-fifths (59%) of the principals had a Bachelor's degree and 32% reported having a Master's degree and above. By educational district, all (100%) of the principals surveyed in Caroni and Tobago had obtained a Bachelor's degree or above while the highest percentage of principals without a university degree was based at schools in the South Eastern district (36%) (Table 5). A review of the data by type of school shows that a relatively larger proportion (97%) of principals in government schools possessed a university degree compared to their counterparts in government-assisted (91%) and private (78%) schools (Table 6). A further examination of the data by age reveals that the highest percentage (60%) of principals without a university degree was observed in the 60 and over age group (Table 7).

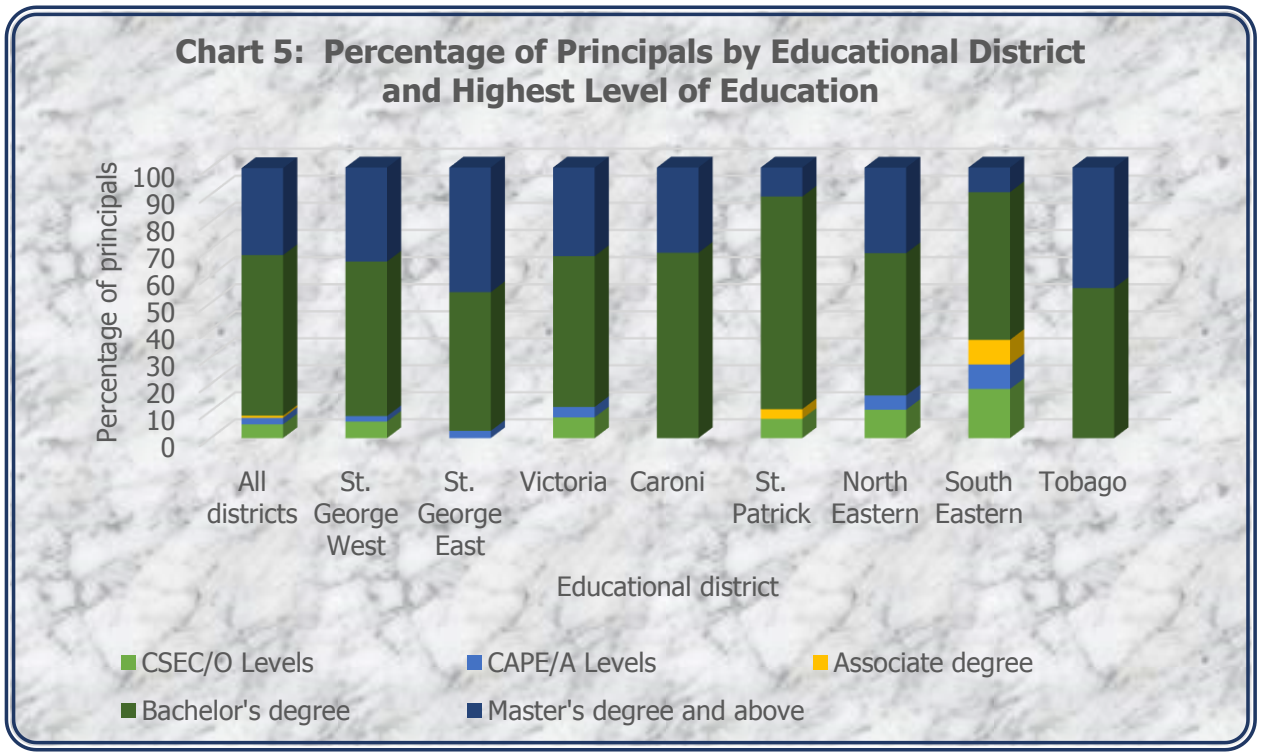


Table 6: Percentage of Principals by Type of School and Highest Level of Education

Type of school	Highest level of education - percentage of principals					
	Total	CSEC/ O Levels	CAPE/ A Levels	Associate degree	Bachelor's degree	Master's degree and above
	(1)	(2)	(3)	(4)	(5)	(6)
All schools	100	5	2	1	59	32
Government	100	2	2	0	55	42
Government-assisted	100	6	2	1	63	28
Private	100	15	8	0	39	39

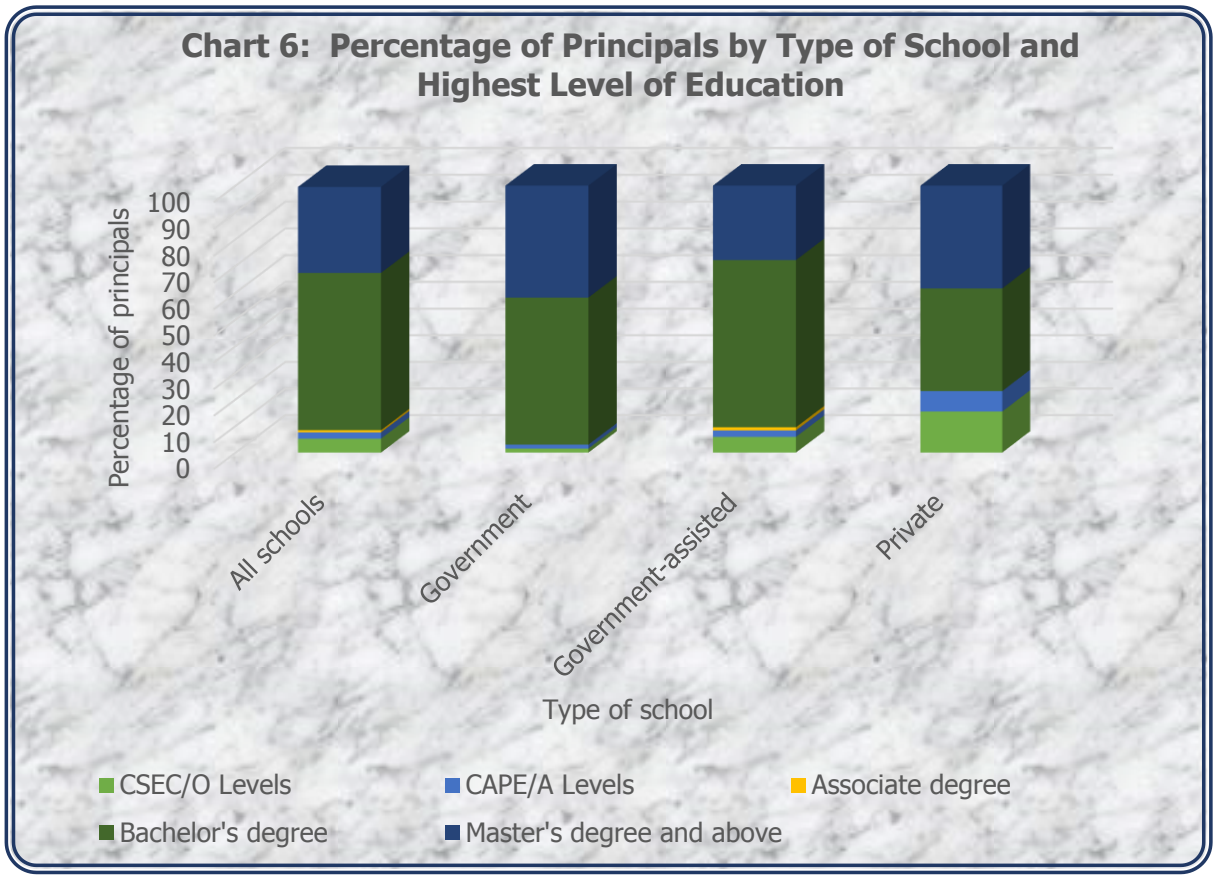


Table 7: Percentage of Principals by Age and Highest Level of Education

Age group (years)	Highest level of education - percentage of principals					
	Total	CSEC/ O Levels	CAPE/ A Levels	Associate degree	Bachelor's degree	Master's degree and above
	(1)	(2)	(3)	(4)	(5)	(6)
All ages	100	5	2	1	59	32
30-39	100	0	0	0	67	33
40-49	100	0	2	0	61	37
50-59	100	9	2	2	59	28
60 and over	100	40	20	0	20	20

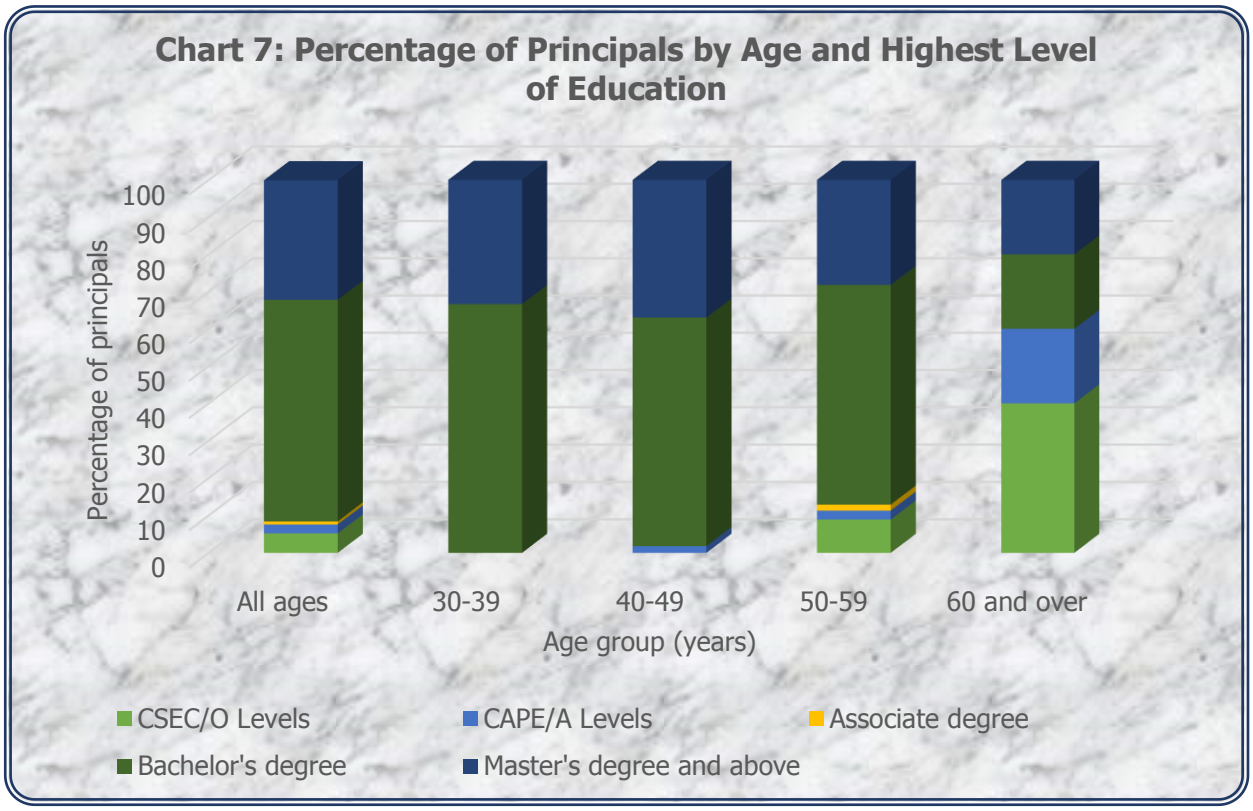


Table 8: Percentage of Principals by Educational District and Highest Qualification in Education

Educational district	Highest qualification in Education - percentage of principals						
	Total	Teacher's diploma	Certificate in education	Diploma in education	B.Ed. degree	M.Ed. degree and above	None
	(1)	(2)	(3)	(4)	(5)	(6)	(7)
All districts	100	12	1	3	54	29	2
St. George West	100	8	2	2	51	33	4
St. George East	100	5	0	0	51	43	0
Victoria	100	12	0	2	56	27	4
Caroni	100	9	3	6	54	29	0
St. Patrick	100	21	0	7	64	7	0
North Eastern	100	21	0	5	42	32	0
South Eastern	100	36	0	0	55	9	0
Tobago	100	0	0	0	56	44	0

Over a half (54%) of the principals reported that their highest level of qualification attained in Education was a B.Ed. degree and 29% indicated a M.Ed. degree and above. By educational district, a relatively higher percentage of principals in Tobago (100%) and St. George East (94%) reported having a B.Ed. degree or above qualification in Education compared to their counterparts in the other educational districts (Table 8). A review of the data by type of school reveals that a higher percentage (90%) of teachers in government schools had a B.Ed. degree or above qualification in Education compared to principals in government-assisted (81%) and private (76%) schools (Table 9).

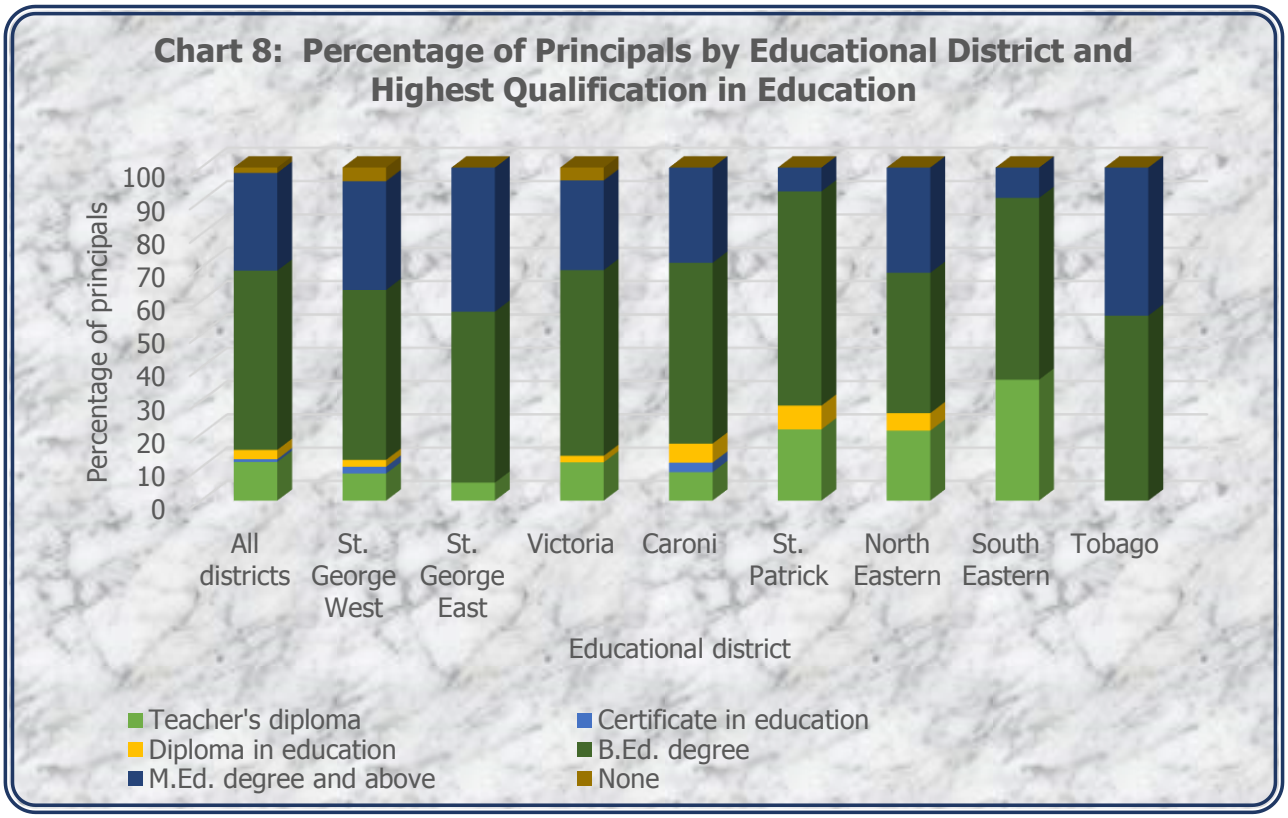


Table 9: Percentage of Principals by Type of School and Highest Qualification in Education

Type of school	Highest qualification in education - percentage of principals						
	Total	Teacher's diploma	Certificate in education	Diploma in education	B.Ed. degree	M.Ed. degree and above	None
	(1)	(2)	(3)	(4)	(5)	(6)	(7)
All schools	100	12	1	3	54	29	2
Government	100	6	1	1	51	39	1
Government-assisted	100	14	1	4	56	25	1
Private	100	15	0	0	38	38	8

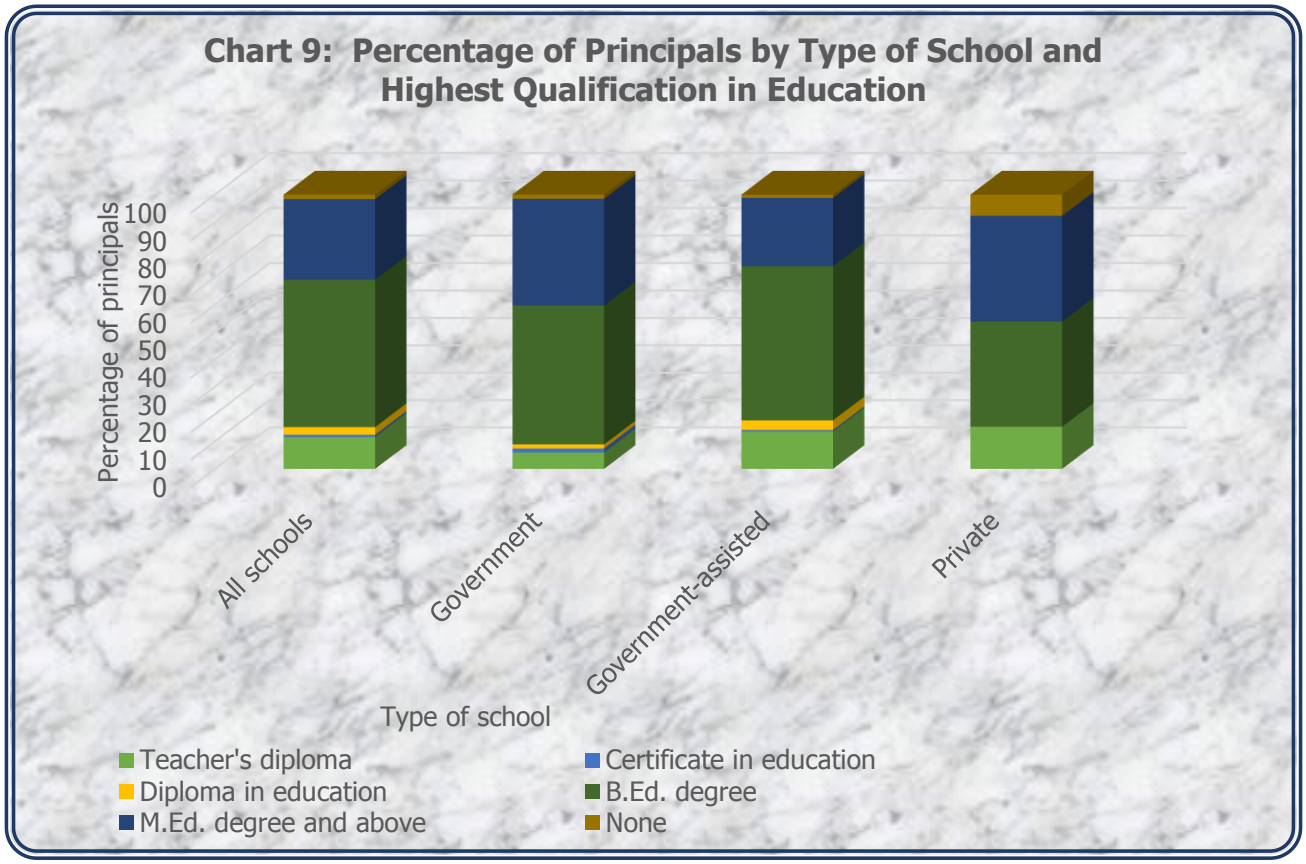


Table 10: Percentage of Principals by Educational District and Highest Qualification in Mathematics

Educational district	Highest qualification in Mathematics - percentage of principals					
	Total	O Level/CSEC	A Level/CAPE	Diploma in Education	Bachelor's degree	Not stated
	(1)	(2)	(3)	(4)	(5)	(6)
All districts	100	72	11	5	6	6
St. George West	100	67	10	6	10	6
St. George East	100	70	16	3	8	3
Victoria	100	67	10	10	8	6
Caroni	100	66	17	0	3	14
St. Patrick	100	79	11	4	4	4
North Eastern	100	84	11	0	5	0
South Eastern	100	55	9	27	0	9
Tobago	100	100	0	0	0	0

Overall, and by educational district and type of school, the majority (72%) of principals recorded an O Level/CSEC pass as their highest level of qualification in Mathematics (Tables 10 and 11). Six percent (6%) of the principals reported the attainment of a Bachelor's Degree in Mathematics as their highest level of qualification.

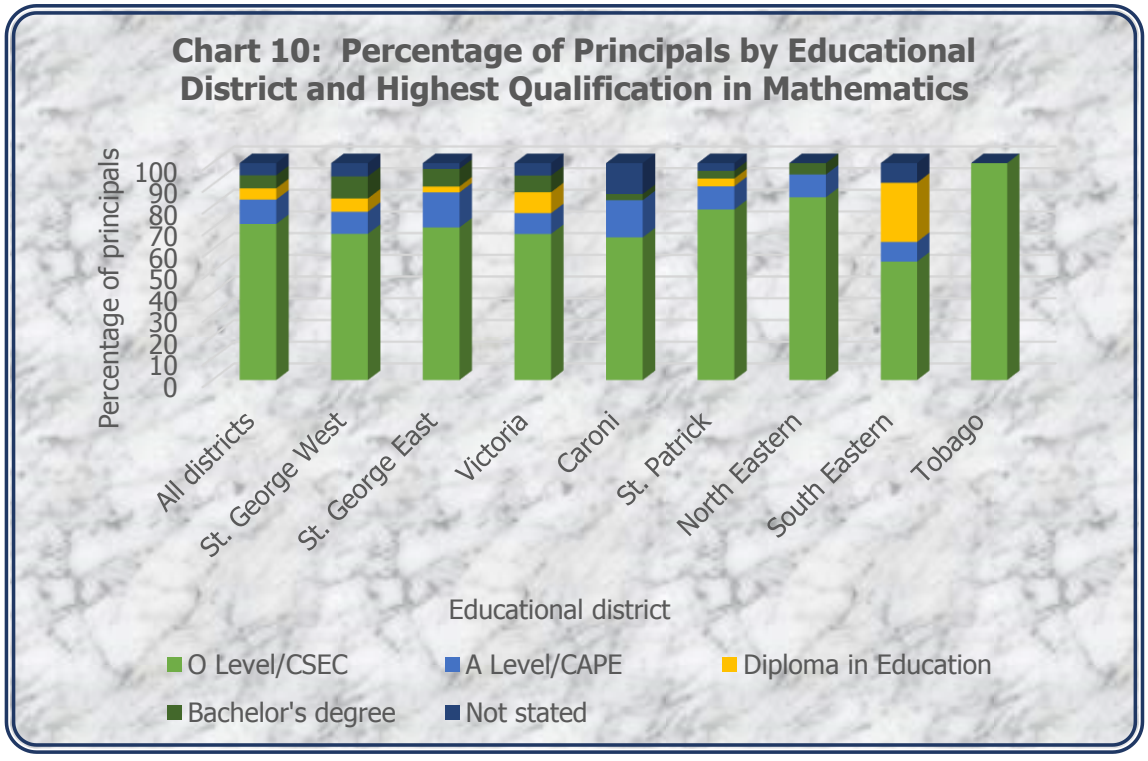


Table 11: Percentage of Principals by Type of School and Highest Qualification in Mathematics

Type of school	Highest qualification in Mathematics - percentage of principals					
	Total	O Level/CSEC	A Level/CAPE	Diploma in Education	Bachelor's degree	Not stated
	(1)	(2)	(3)	(4)	(5)	(6)
All schools	100	72	11	5	6	6
Government	100	78	10	1	4	6
Government-assisted	100	70	11	6	7	6
Private	100	62	15	15	8	0

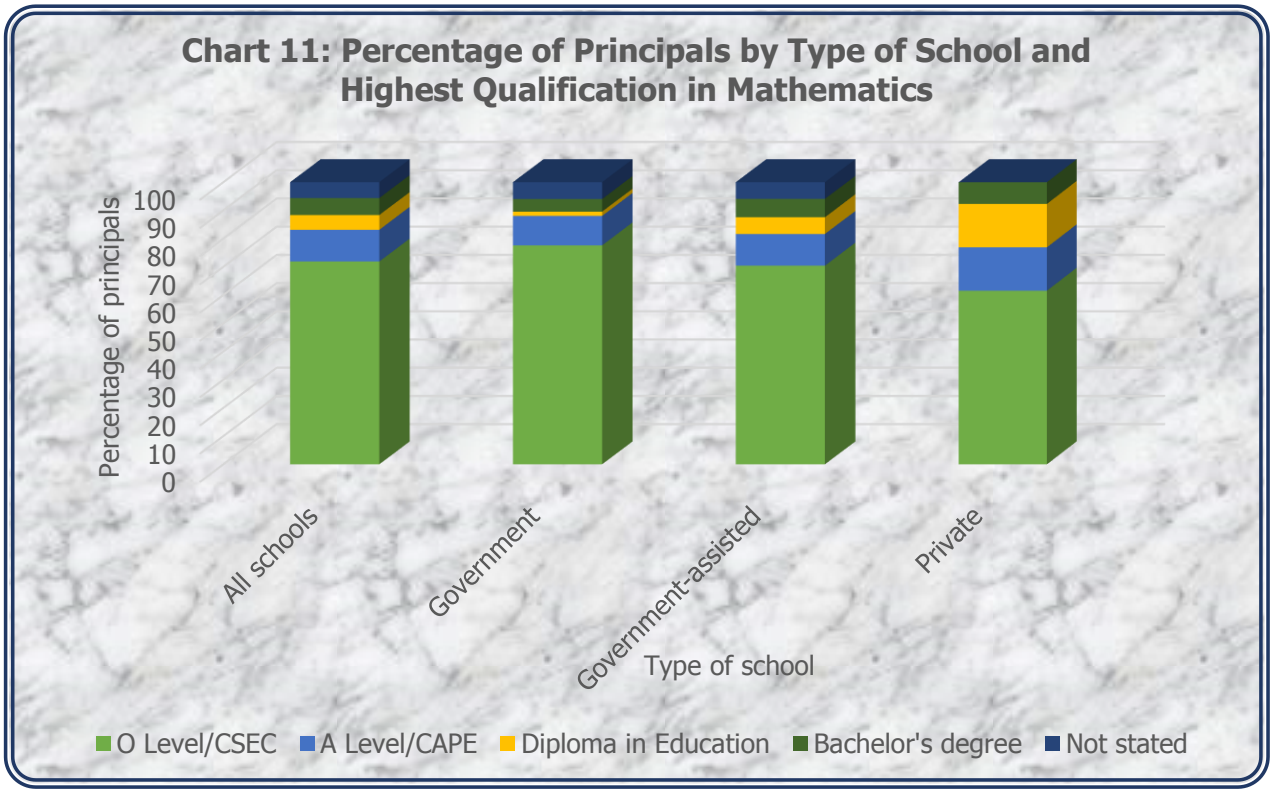


Table 12: Percentage of Principals by Educational District and Length of Service as a Principal

Educational district	Length of service as a principal - percentage of principals				
	Total	0-4 years	5-9 years	10-14 years	15 years and over
	(1)	(2)	(3)	(4)	(5)
All districts	100	51	38	6	5
St. George West	100	49	33	6	12
St. George East	100	46	49	5	0
Victoria	100	48	38	12	2
Caroni	100	51	37	6	6
St. Patrick	100	71	25	0	4
North Eastern	100	47	47	5	0
South Eastern	100	36	55	0	9
Tobago	100	56	33	6	6

Approximately a half (51%) of the sample of primary school principals, especially in the St. Patrick district (71%) and government schools (63%), reported service of 0 - 4 years in the post of principal while 38% reported 5 - 9 years (Tables 12 and 13). Less than ten percent (10%) of the principals in each case reported 10 - 14 years (6%) and 15 years and over (5%) experience in the post of principal. Accumulatively, approximately a half (51%) of the principals in private primary schools recorded service of 10 years and over in the post of principal.

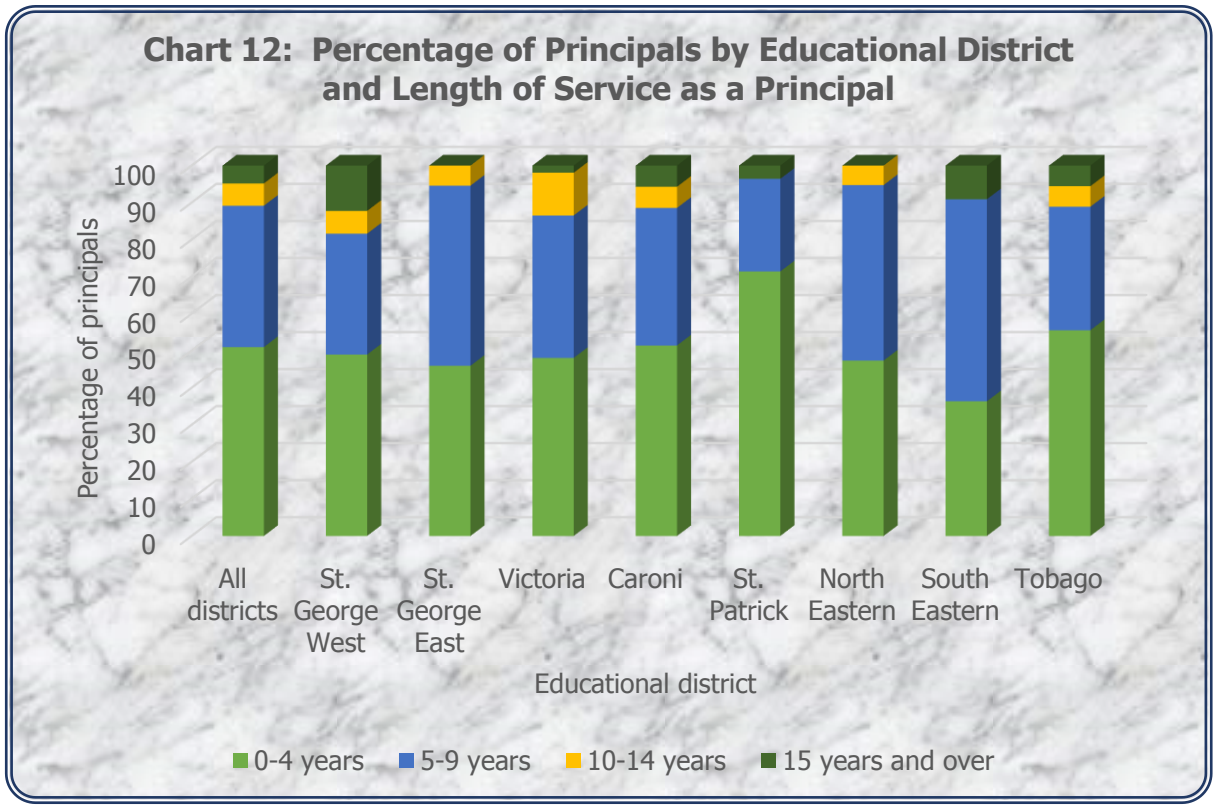


Table 13: Percentage of Principals by Type of School and Length of Service as a Principal

Type of school	Length of service as a prinicpal - percentage of principals				
	Total	0-4 years	5-9 years	10-14 years	15 years and over
	(1)	(2)	(3)	(4)	(5)
All schools	100	51	38	6	5
Government	100	63	33	3	1
Government-assisted	100	49	41	5	5
Private	100	15	23	38	23

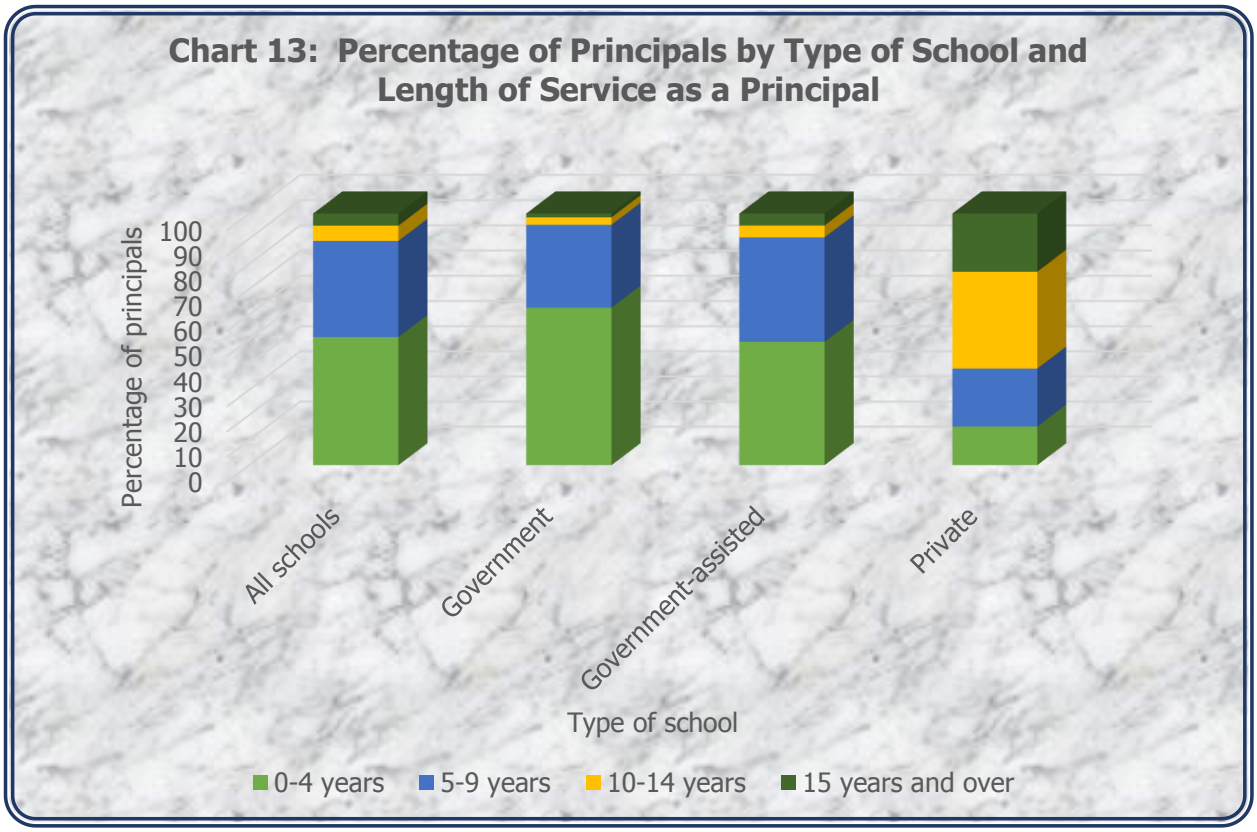


Table 14: Student Population by Educational District

Educational district	Number of students in school - percentage of schools							
	Total	Less than 100	100 - 199	200 - 299	300 - 399	400 - 499	500 and over	Not stated
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
All districts	100	19	31	19	8	10	7	6
St. George West	100	12	33	16	10	14	6	8
St. George East	100	19	19	11	11	14	16	11
Victoria	100	19	31	21	6	8	8	8
Caroni	100	6	37	23	17	11	6	0
St. Patrick	100	11	39	32	7	4	4	4
North Eastern	100	58	16	11	0	11	5	0
South Eastern	100	27	36	18	0	9	0	9
Tobago	100	33	39	17	6	0	0	6

Table 14 shows the student population of the sample of primary schools by educational district. A substantial percentage (31%) of schools recorded a student population of between 100 - 199 while approximately one-fifth of the schools had less than 100 (19%) and 200 - 299 (19%) students. By educational district, St. George East, St. George West and Caroni registered the largest student populations while the smallest student population was observed in the North Eastern district followed by the Tobago and South Eastern districts. A further examination of the data by type of school shows that a higher percentage of government (37%) and government-assisted (29%) schools reported 100 - 199 students, while a substantial percentage (38%) of private schools registered less than 100 students (Table 15). In terms of the student/teacher ratio the data show a positive relationship between the number of students and the number of teachers (Table 16).

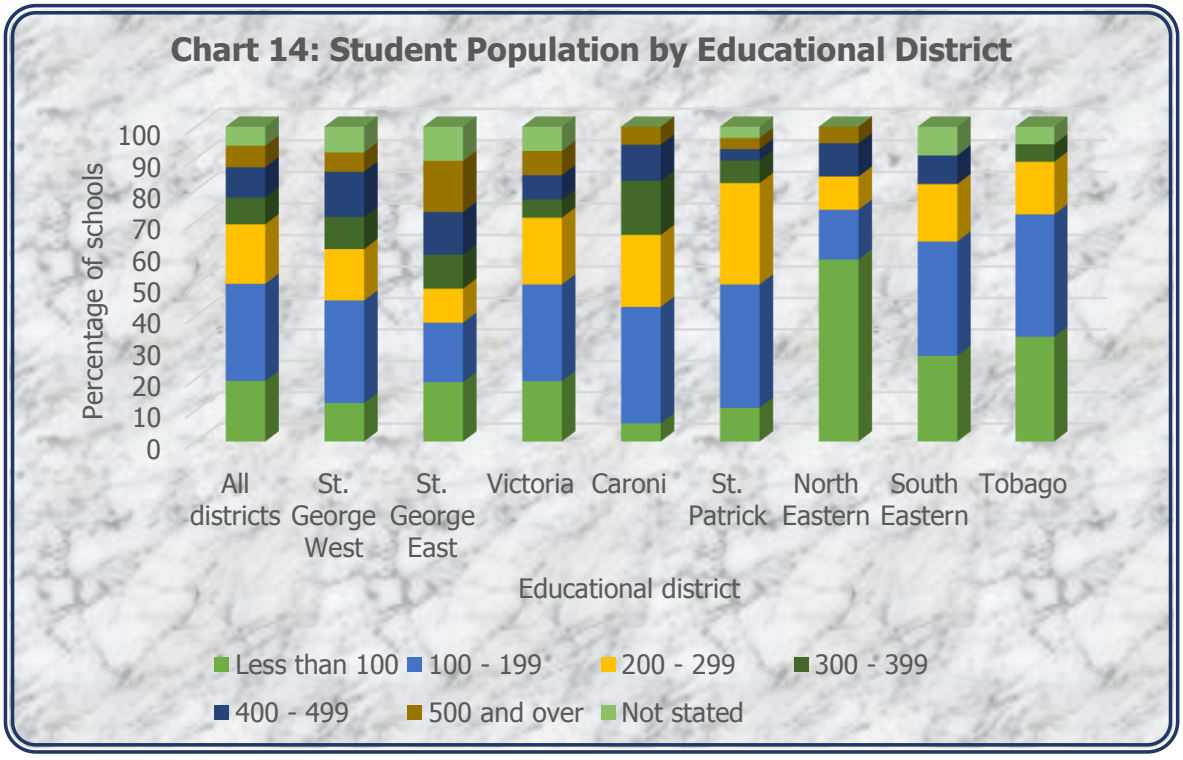


Table 15: Student Population by Type of School

Type of school	Number of students in school - percentage of schools							
	Total	Less than 100	100 - 199	200 - 299	300 - 399	400 - 499	500 and over	Not stated
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
All schools	100	19	31	19	8	10	7	6
Government	100	15	37	21	7	3	10	6
Government-assisted	100	20	29	18	9	12	6	6
Private	100	38	23	15	0	15	0	8

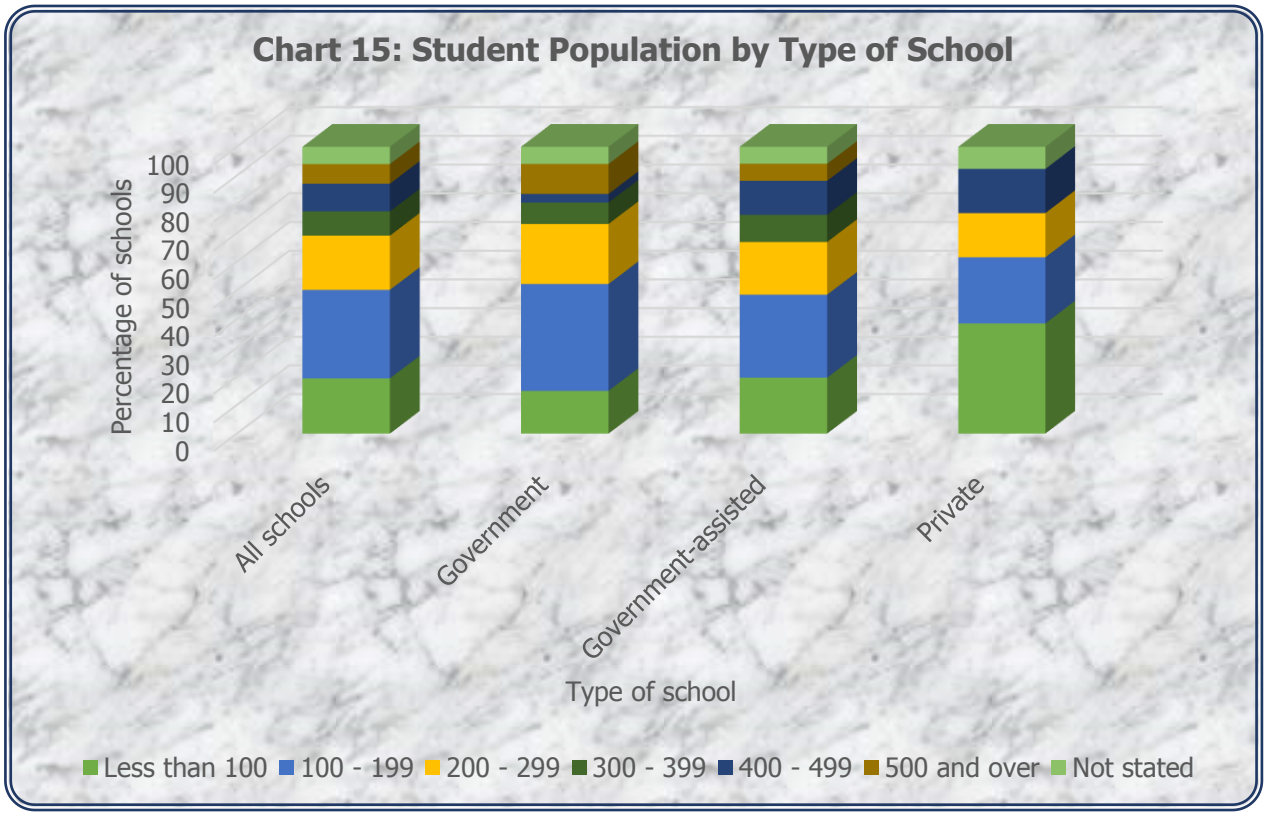


Table 16: Number of Teachers by Student Population

Number of teachers in school	Number of students in school - percentage of schools							
	Total	Less than 100	100 - 199	200 - 299	300 - 399	400 - 499	500 and over	Not stated
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
Total	100	19	31	19	8	10	7	6
Less than 10	100	44	50	2	0	0	1	3
10-19	100	3	24	41	17	10	0	6
20 - 29	100	0	0	0	11	39	36	14
30 and above	100	0	0	0	0	20	60	20

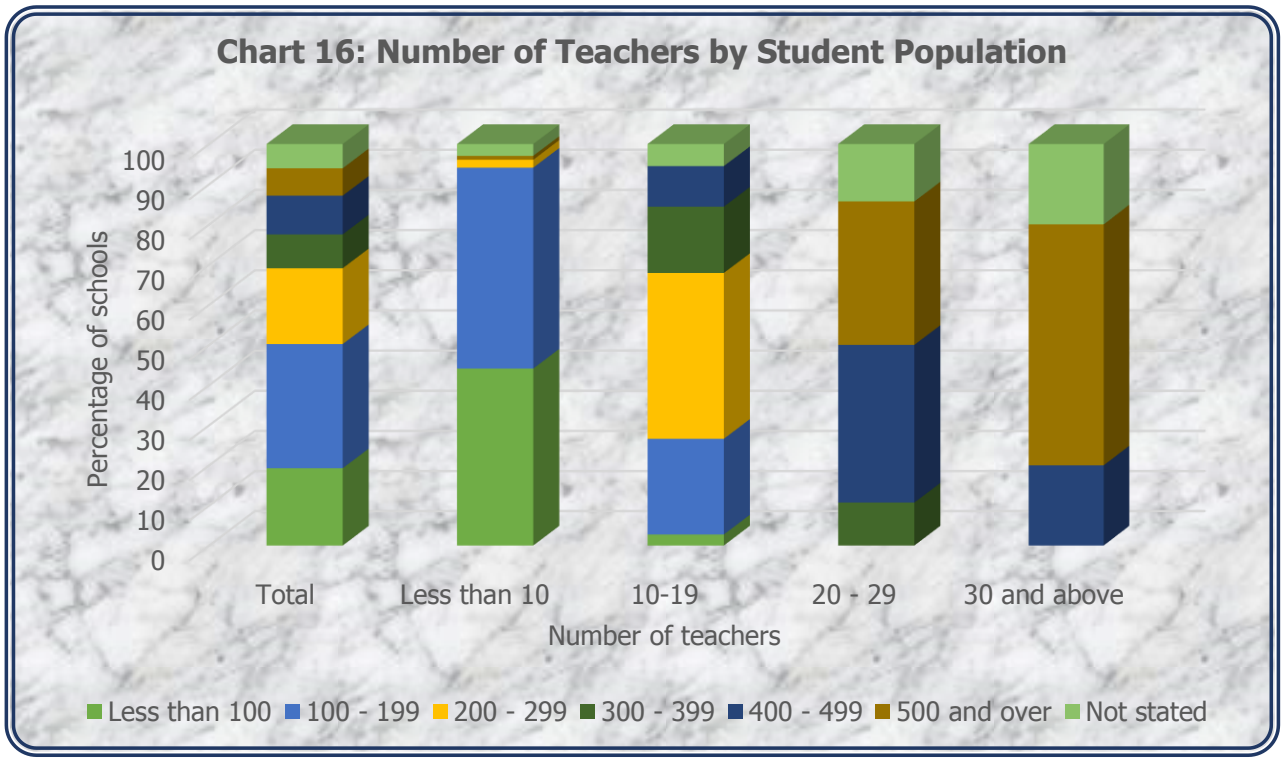


Table 17: Availability of Mathematics Resources by Educational District

Educational district	Mathematics resources were available to teachers - percentage of principals		
	Total	Yes	No
	(1)	(2)	(3)
All districts	100	98	2
St. George West	100	98	2
St. George East	100	95	5
Victoria	100	98	2
Caroni	100	97	3
St. Patrick	100	96	4
North Eastern	100	100	0
South Eastern	100	100	0
Tobago	100	100	0

Almost all (98%) of the principals indicated that there were Mathematics resources available to the teachers in their schools.

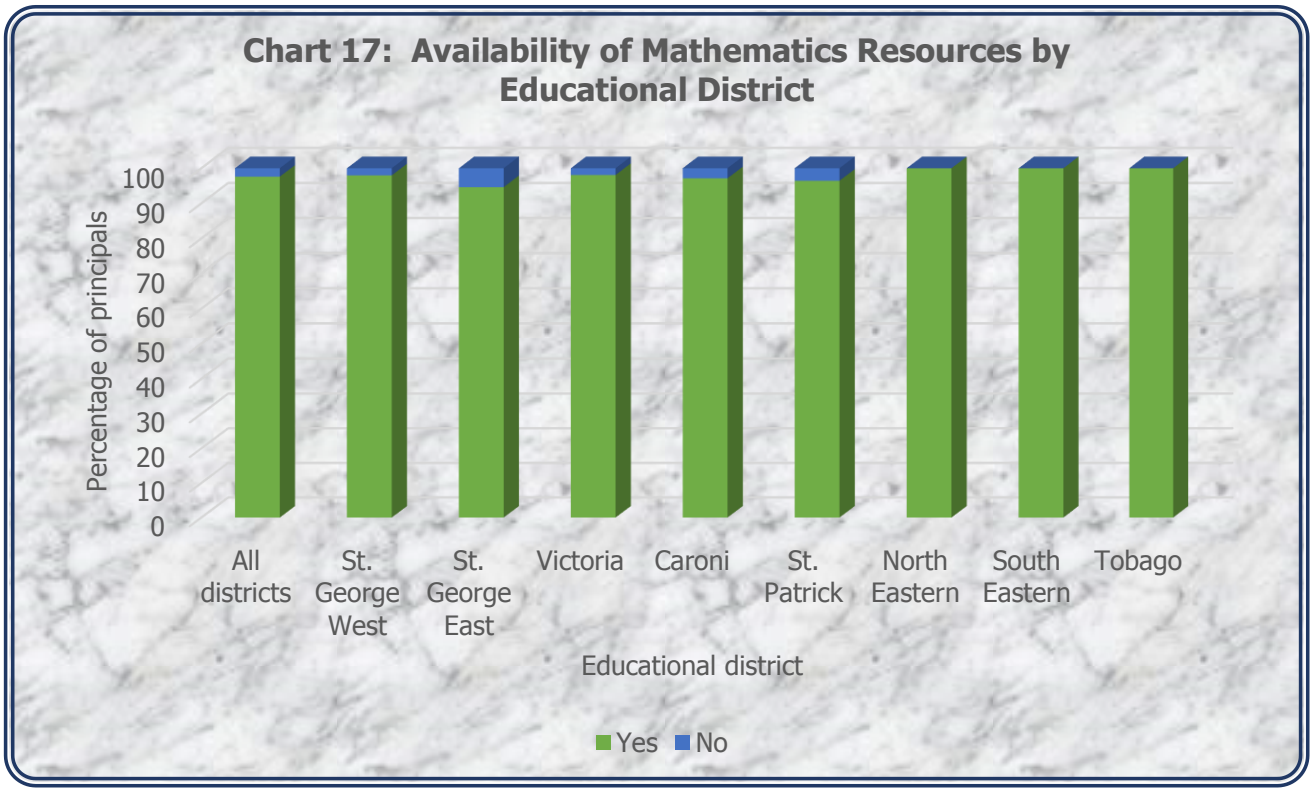


Table 18: Use of Mathematics Resources by Class Level

Class level	Use of Mathematics resources by teachers - percentage of principals				
	Total	Always	Sometimes	Never	Not stated
	(1)	(2)	(3)	(4)	(5)
Infant 1	100	41	55	0	3
Infant 2	100	40	57	0	3
Standard 1	100	31	64	2	3
Standard 2	100	21	74	2	3
Standard 3	100	22	74	1	3
Standard 4	100	21	72	4	3
Standard 5	100	15	74	7	4

Table 18 shows the frequency teachers used Mathematics resources by class level. The data reveal that teachers in the lower class levels used Mathematics resources more frequently than their counterparts in the higher class levels; two-fifths of the teachers in the Infant levels 1 (41%) and 2 (40%) always used Mathematics resources compared to 15% in Standard 5.

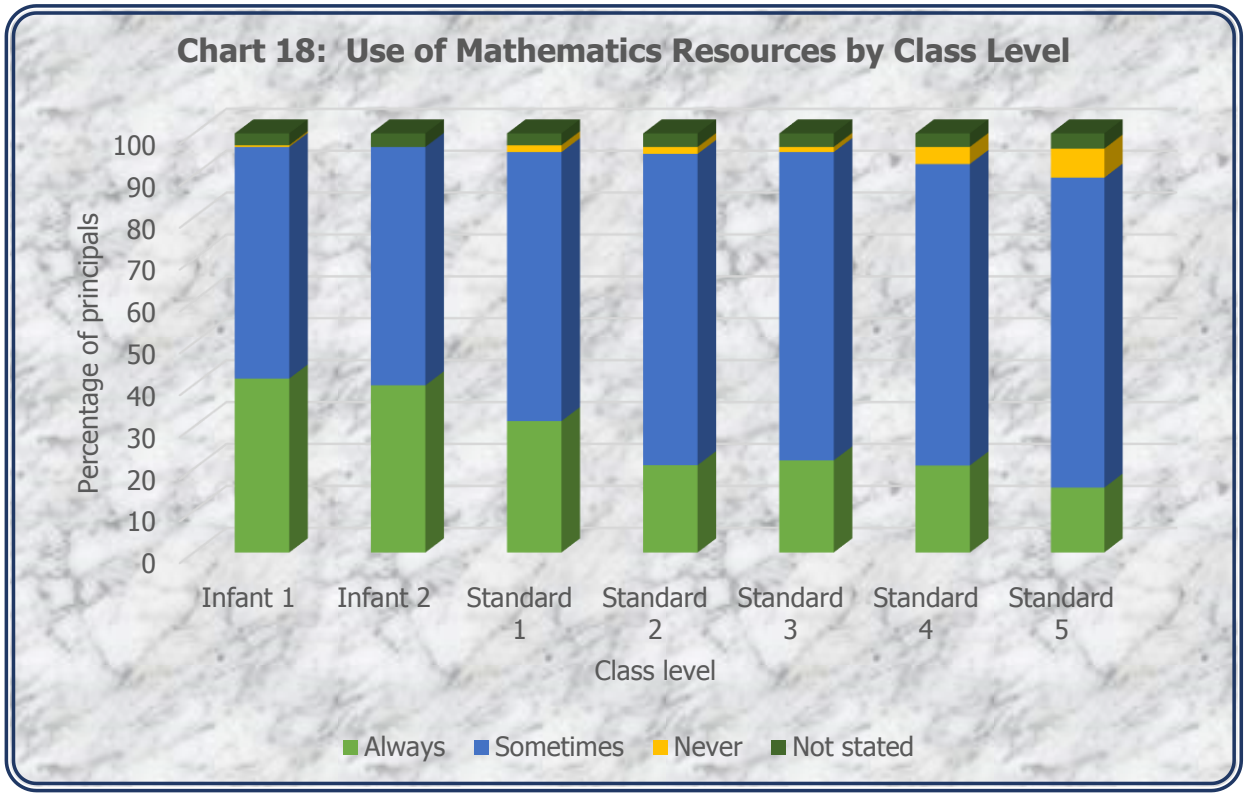


Table 19: Numeracy as a Component of School Development Plan by Educational District

Educational district	Numeracy as a component of school development plan - percentage of principals			
	Total	Yes	No	Not stated
	(1)	(2)	(3)	(4)
All districts	100	88	9	3
St. George West	100	86	10	4
St. George East	100	78	16	5
Victoria	100	96	4	0
Caroni	100	91	9	0
St. Patrick	100	96	4	0
North Eastern	100	95	5	0
South Eastern	100	100	0	0
Tobago	100	61	22	17

Most principals (88%), especially in the South Eastern district (100%), stated that numeracy was a component of their school development plan while 9%, mainly in the educational district of Tobago (22%), reported that it was not (Table 19). By type of school the data show that a higher percentage (91%) of principals in government-assisted schools reported numeracy as part of the school development plan compared to principals in government (85%) and private (69%) primary schools (Table 20).

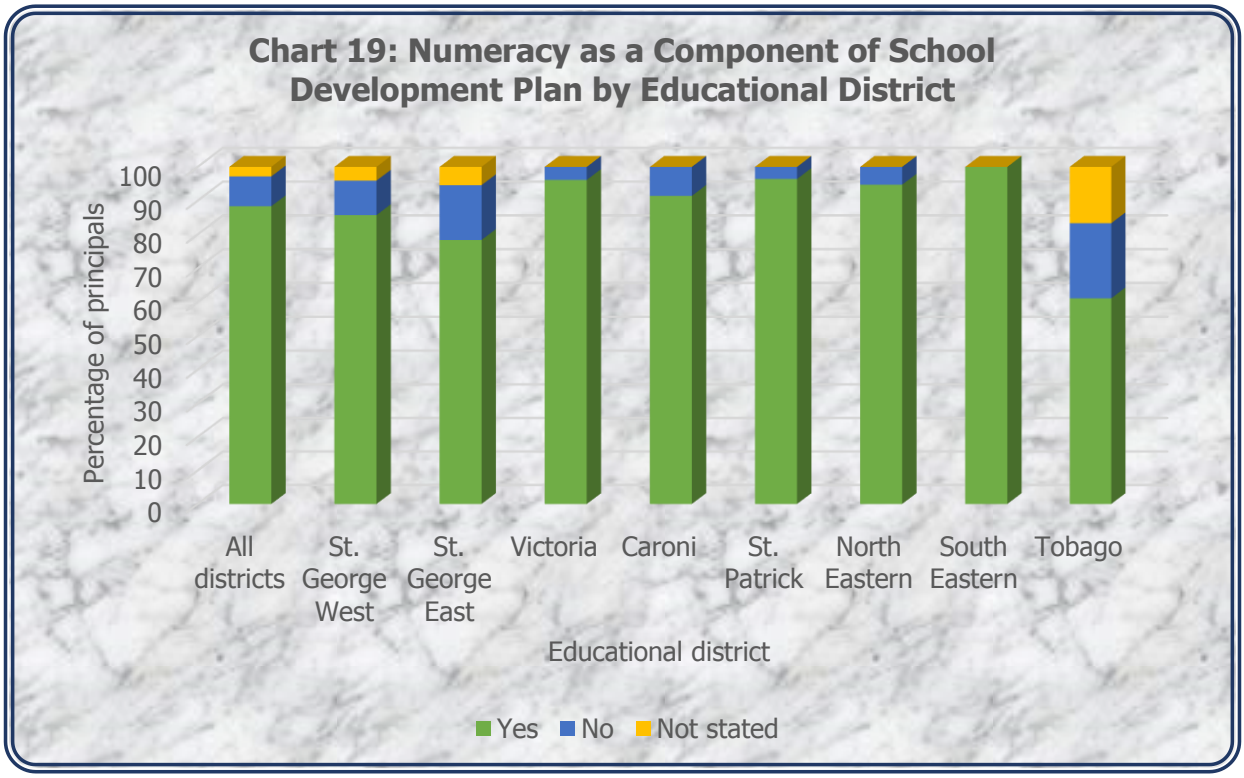


Table 20: Numeracy as a Component of School Development Plan by Type of School

Type of school	Numeracy as a component of school development plan - percentage of principals			
	Total	Yes	No	Not stated
	(1)	(2)	(3)	(4)
All schools	100	88	9	3
Government	100	85	13	1
Government-assisted	100	91	7	2
Private	100	69	15	15

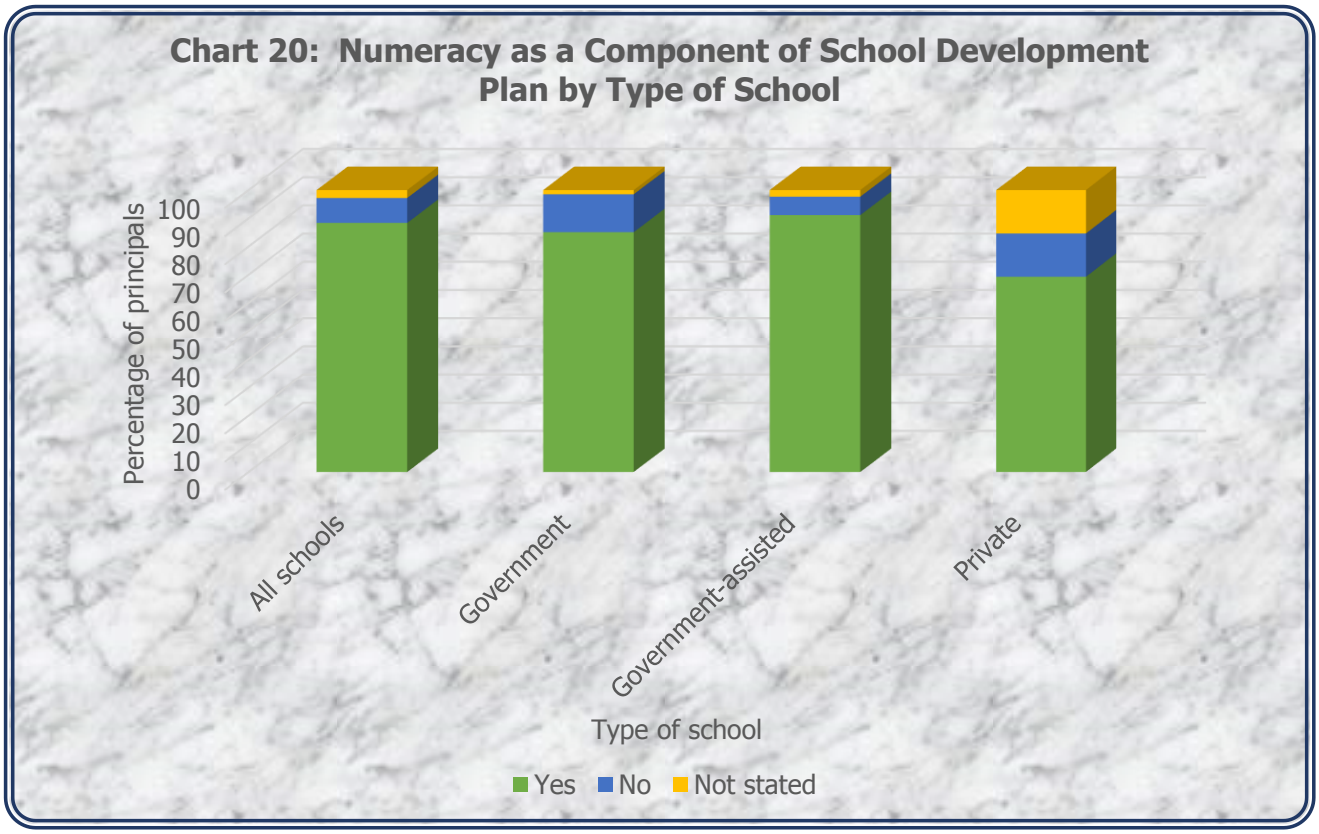


Table 21: Inventory of Numeracy Resources by Educational District

Educational district	Inventory of numeracy resources taken at school percentage of principals			
	Total	Yes	No	Not stated
	(1)	(2)	(3)	(4)
All districts	100	63	30	7
St. George West	100	57	35	8
St. George East	100	59	32	8
Victoria	100	71	23	6
Caroni	100	74	20	6
St. Patrick	100	54	43	4
North Eastern	100	68	26	5
South Eastern	100	91	9	0
Tobago	100	28	50	22

A substantial percentage (63%) of principals, especially in the South Eastern district (91%) and government schools (72%), indicated that an inventory of numeracy resources was taken at their school while 30% indicated that an inventory was not undertaken at their schools and 7% did not respond (Tables 21 and 22).

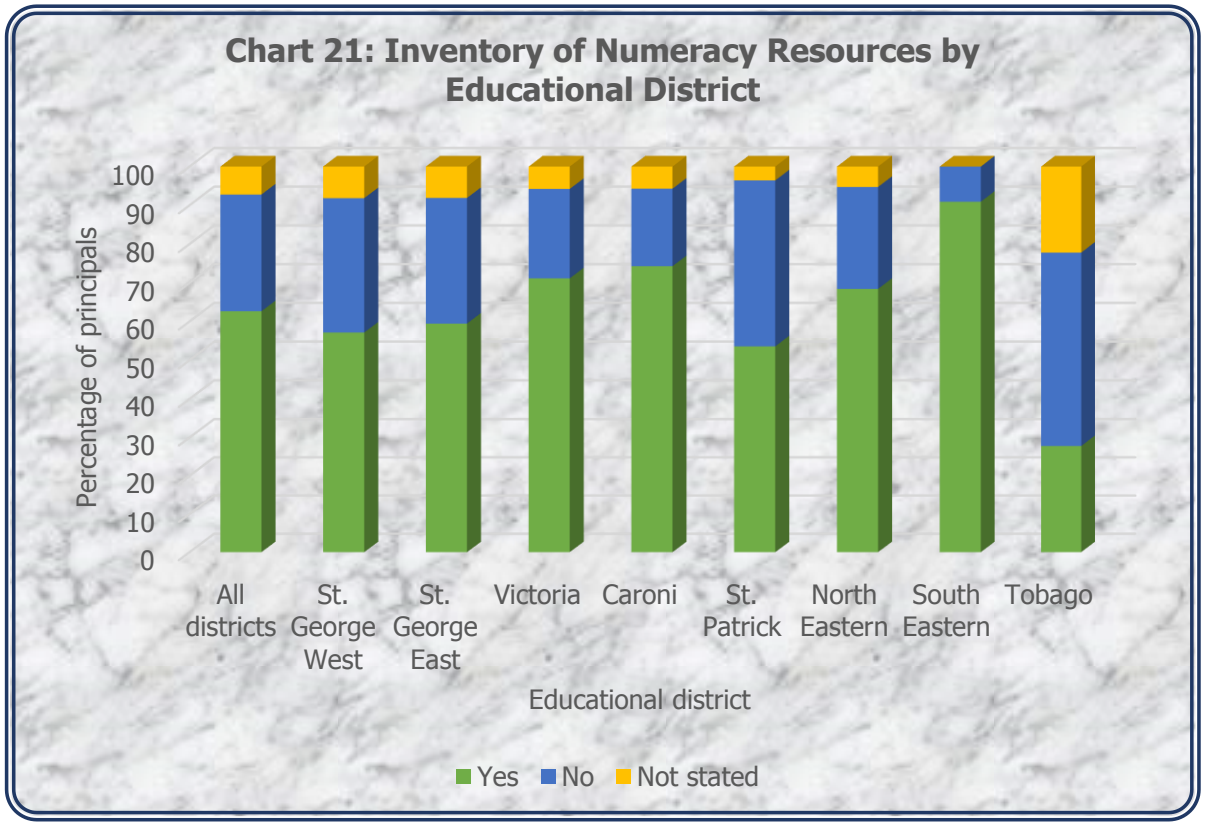


Table 22: Inventory of Numeracy Resources by Type of School

Type of school	Inventory of numeracy resources taken at school - percentage of principals			
	Total	Yes	No	Not stated
	(1)	(2)	(3)	(4)
All schools	100	63	30	7
Government	100	72	24	4
Government-assisted	100	62	30	8
Private	100	31	62	8

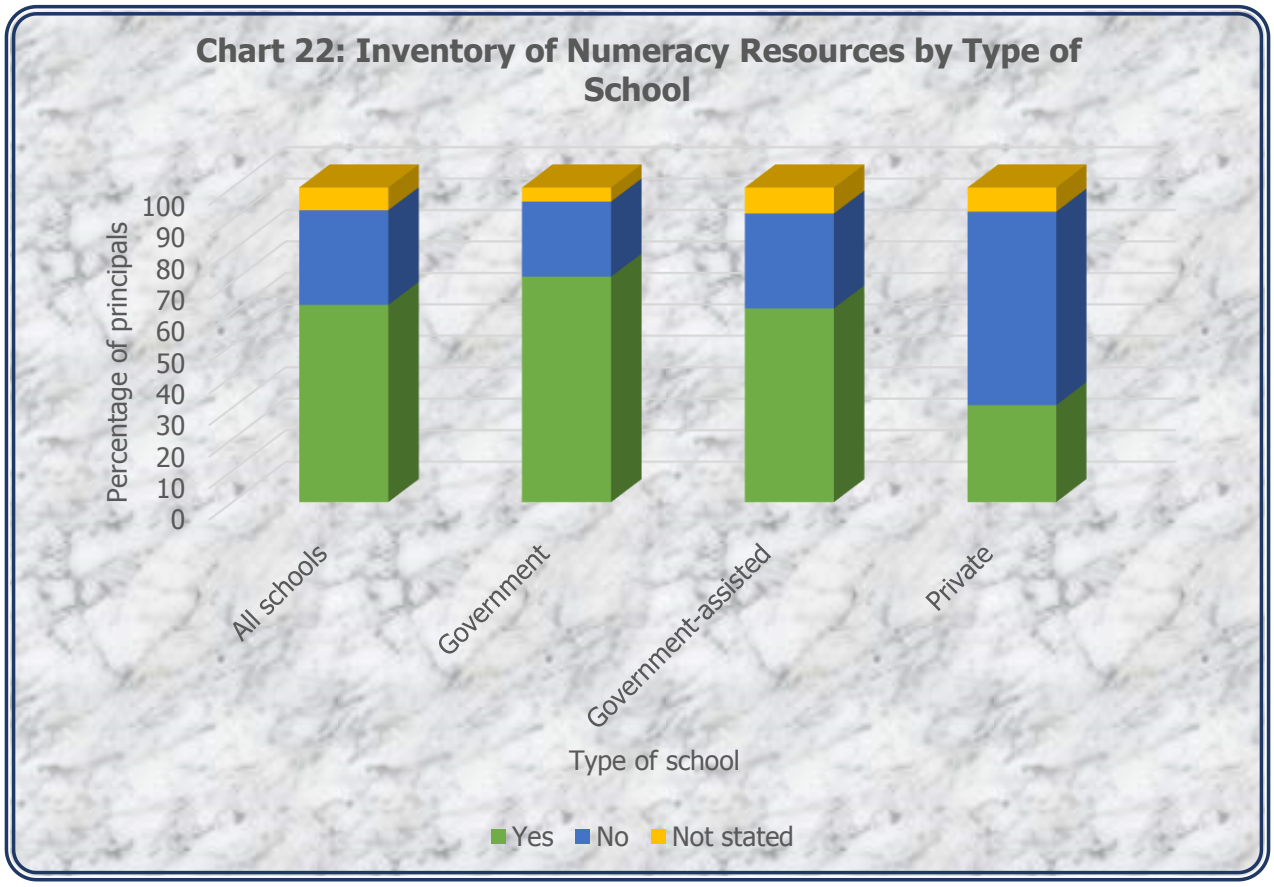


Table 23: Activities to Promote Numeracy Development

Activity	School engaged in activity - percentage of principals			
	Total	Yes	No	Not stated
	(1)	(2)	(3)	(4)
1 Math Club	100	2	96	2
2 Mental Mathematics Competition	100	86	13	1
3 Numeracy Wall/Corner	100	49	49	2
4 Problem of the Week	100	17	82	2

The table above shows a list of activities schools engaged in to promote numeracy development. A significant majority (86%) of the principals reported that their schools participated in Mental Mathematics competitions and approximately a half (49%) of the schools had established a numeracy wall/corner.

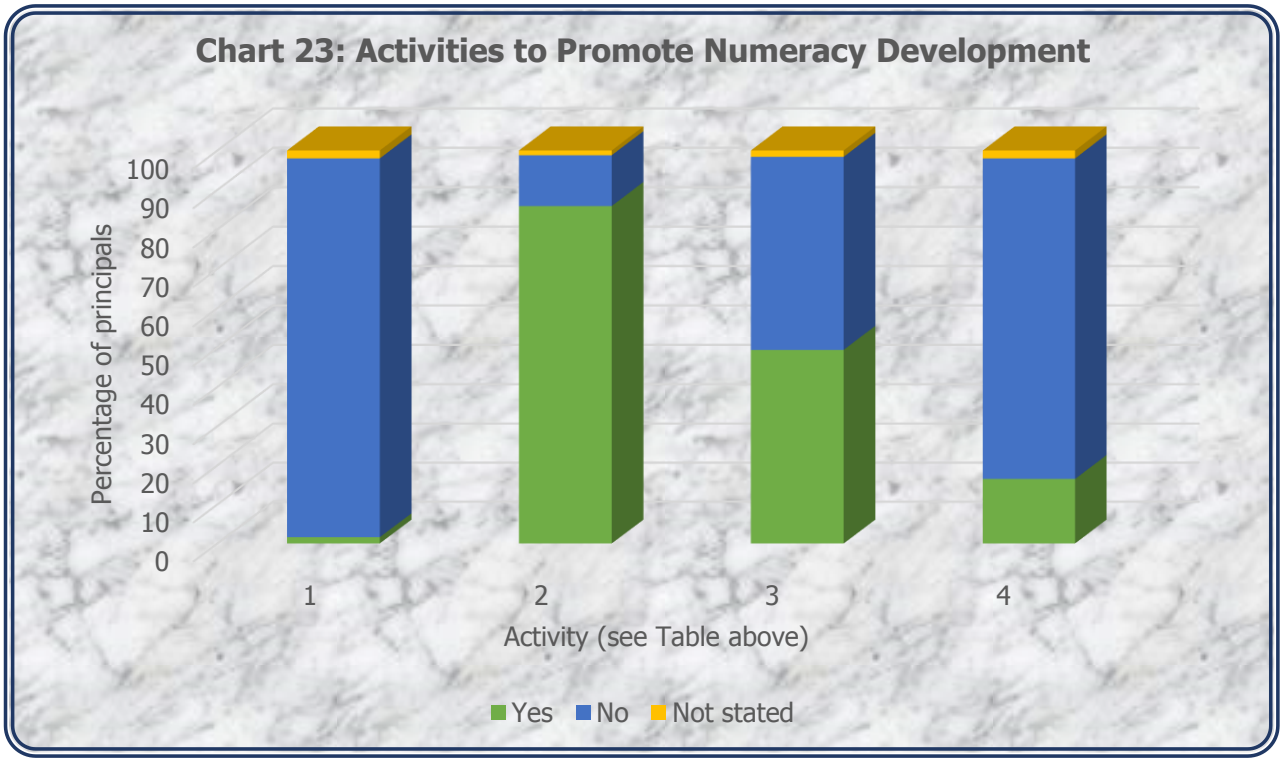


Table 24: Areas Considered to be a Priority in Mathematics Education

Area in Mathematics education	Priority area - percentage of principals		
	Total	Yes	No
	(1)	(2)	(3)
1 Conceptual understanding	100	83	17
2 Problem solving/Critical thinking	100	95	5
3 Teaching methods	100	77	23
4 Inquiry-Based Learning	100	47	53
5 Attitudes	100	35	66
6 Use of ICT for Mathematics	100	52	48

From the list of areas in Mathematics Education in the table above, principals identified problem solving/critical thinking as the most important priority area (95%) followed by conceptual thinking (83%) and teaching methods (77%).

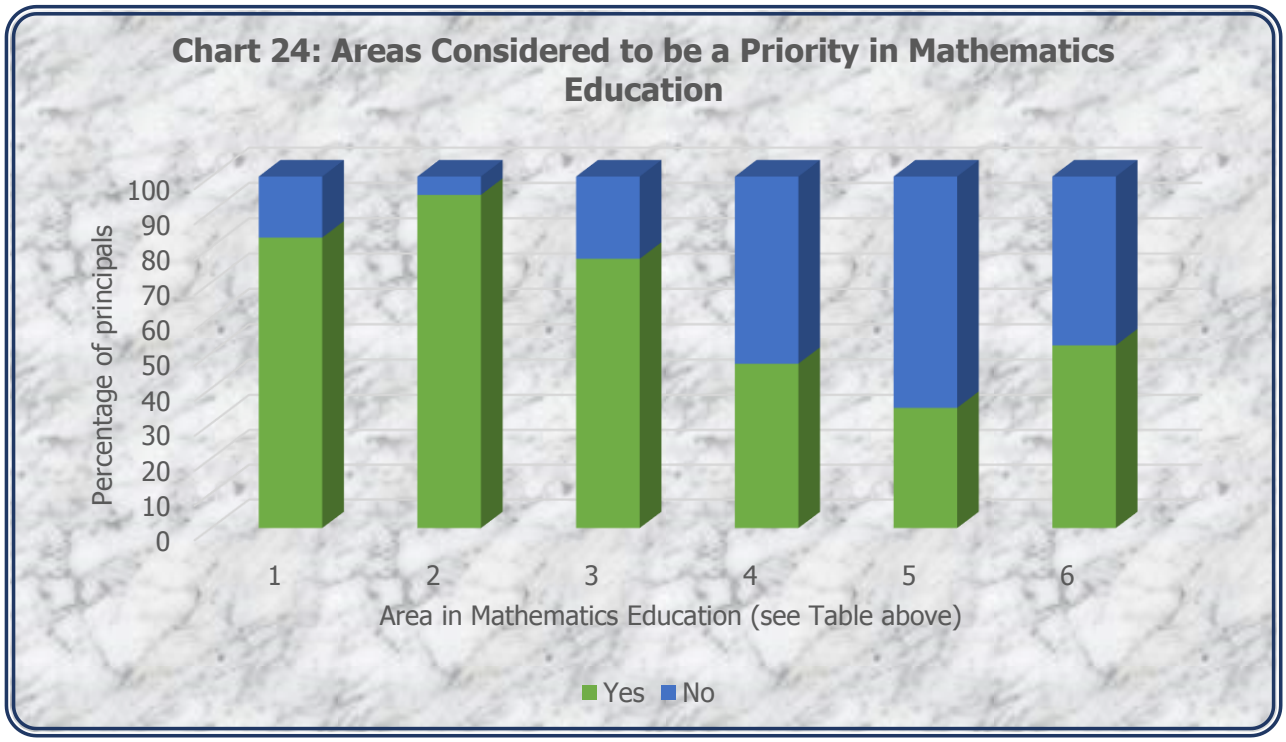


Table 25: Areas of Emphasis for Teacher Development

Area	Percentage
	(1)
Teaching Methods	45
Critical thinking/Problem solving	30
Concept teaching with the use of resources	26
Training in ICT for Mathematics	17
Use of resources to teach Mathematics	12
Instructional strategies for remedial students	5
Training and development workshops	4
Teachers attitudes and commitment	4
Teachers understanding of the curriculum	4
Inquiry-based learning	4
Other	9

Table 25 presents a list of areas which the principals surveyed indicated should be emphasised for teacher development. The top three (3) areas identified were teaching methods (45%), critical thinking/problem solving (30%) and concept teaching with the use of resources (26%).

Table 26: Suggestions of Ways to Improve Students' Performance in Mathematics at the Primary Level

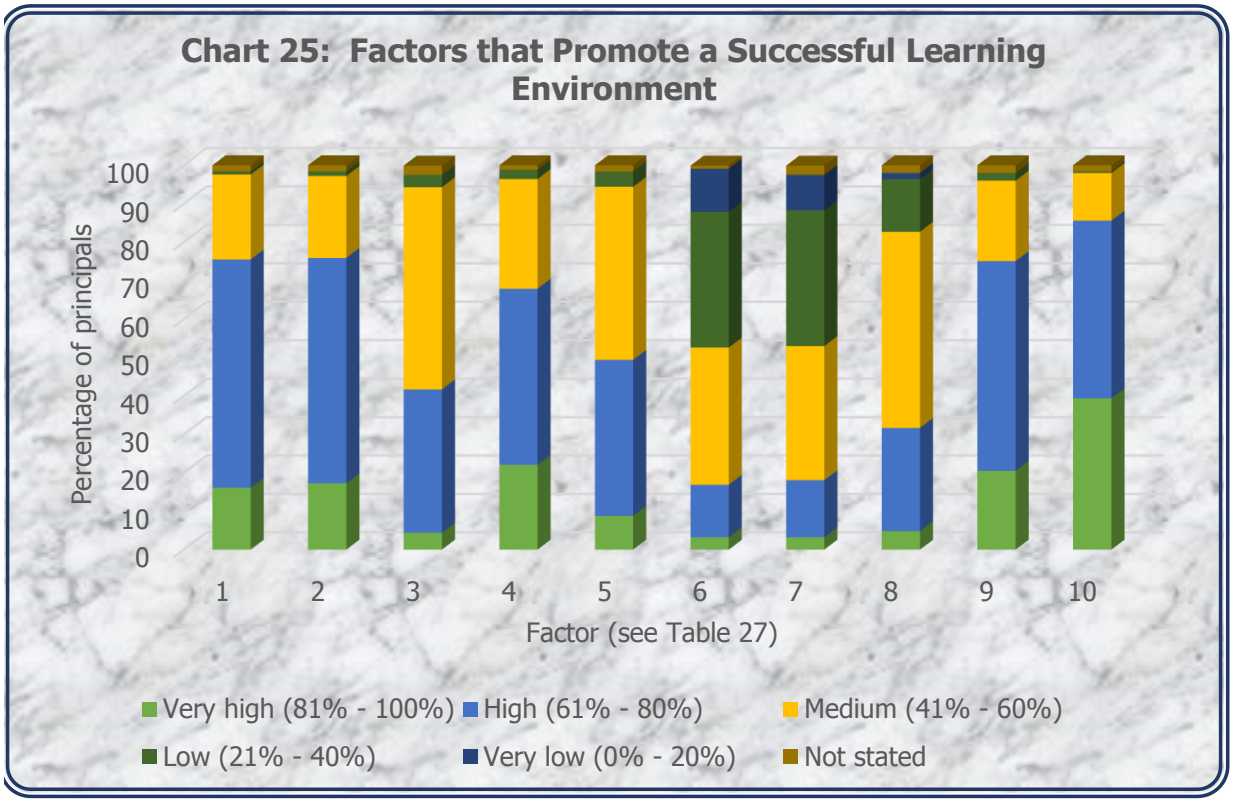
Suggestion	No. of principals	Percentage of principals
	(1)	(2)
Teaching concepts using manipulatives	69	28
Increase teacher development	68	27
Make Mathematics more hands-on and fun	46	18
Relate Mathematics to everyday life	37	15
Encourage critical thinking/ problem solving amongst students	31	12
Improvements in classroom instruction	30	12
Provision of more Mathematics resources	26	10
Changes in ministry/school policies	38	15
Use of differentiated instruction	19	8
More use of ICT to engage student	21	8
More parental involvement	20	8
More students' enrichment programmes	18	7

Table 26 presents a summary of suggestions principals provided of methods that could be used to improve students' performance in Mathematics at the primary level. The main suggestion was the teaching of concepts using manipulatives (28%), followed by increasing teacher development (27%) and making Mathematics more hands-on and fun (18%).

Table 27: Factors that Promote a Successful Learning Environment

Factor	Rating - percentage of principals						
	Total	Very high (81% - 100%)	High (61% - 80%)	Medium (41% - 60%)	Low (21% - 40%)	Very low (0% - 20%)	Not stated
	(1)	(2)	(3)	(4)	(5)	(6)	(7)
1 Teachers' understanding of the Mathematics curriculum	100	16	59	22	1	0	2
2 Teachers' knowledge of the content of the Mathematics curriculum	100	17	59	21	1	0	2
3 Teachers' success in implementing the curriculum	100	4	37	53	3	0	2
4 Teachers' commitment to work together to improve students' achievement	100	22	46	29	2	0	1
5 Teachers' ability to inspire students	100	9	41	45	4	0	2
6 Parental involvement in school activities	100	3	14	36	35	11	1
7 Parental support for students' achievement	100	3	15	35	35	9	2
8 Students' desire to do well in school	100	5	27	51	14	2	2
9 Instructional support provided to teachers by school administration	100	21	55	21	2	0	2
10 School administration's support for teachers' professional development	100	39	46	12	0	0	2

The table above identifies several factors that were necessary to promote a successful learning environment and how the sample of principals rated them within their schools. Three-quarters (75%) or more of the principals indicated that the following factors were high (very high + high) in their schools: school administration's support for teachers' professional development (86%), teachers' understanding of the Mathematics curriculum (76%), teachers' knowledge of the content of the Mathematics curriculum (76%) and instructional support provided to teachers by school administration (75%). Over two-thirds (68%) of the principals stated that teachers' commitment to work together was high and approximately a half (49%) assigned a similar rating to teachers' ability to inspire students. The survey results show that the lowest rating (low + very low) was assigned to parental involvement in school activities (47%) and parental support for students' achievement (45%).



Source: Table 27

Table 28: Distribution of Teachers by Educational District and Gender

Educational district	Gender					
	Total		Male		Female	
	No.	Percentage	No.	Percentage	No.	Percentage
	(1)	(2)	(3)	(4)	(5)	(6)
All districts	248	100	64	26	184	74
St. George West	49	100	13	27	36	73
St. George East	37	100	3	8	34	92
Victoria	50	100	14	28	36	72
Caroni	36	100	11	31	25	69
St. Patrick	27	100	9	33	18	67
St. Andrew/St. David	20	100	7	35	13	65
Nariva/Mayaro	11	100	4	36	7	64
Tobago	18	100	3	17	15	83

Table 28 shows the distribution of Mathematics teachers surveyed by educational district and gender. Of the total sample of 248 teachers, approximately a quarter (26%) was male while 74% were females, representing a 1:3 male to female ratio. A review of the data by educational district reveals that females out-numbered their male counterparts in all districts (Table 28). A further examination of the data by type of school shows that most teachers (92%) in private primary schools were female. Additionally, females also out-numbered males in government-assisted (78%) and government (61%) schools (Table 29).

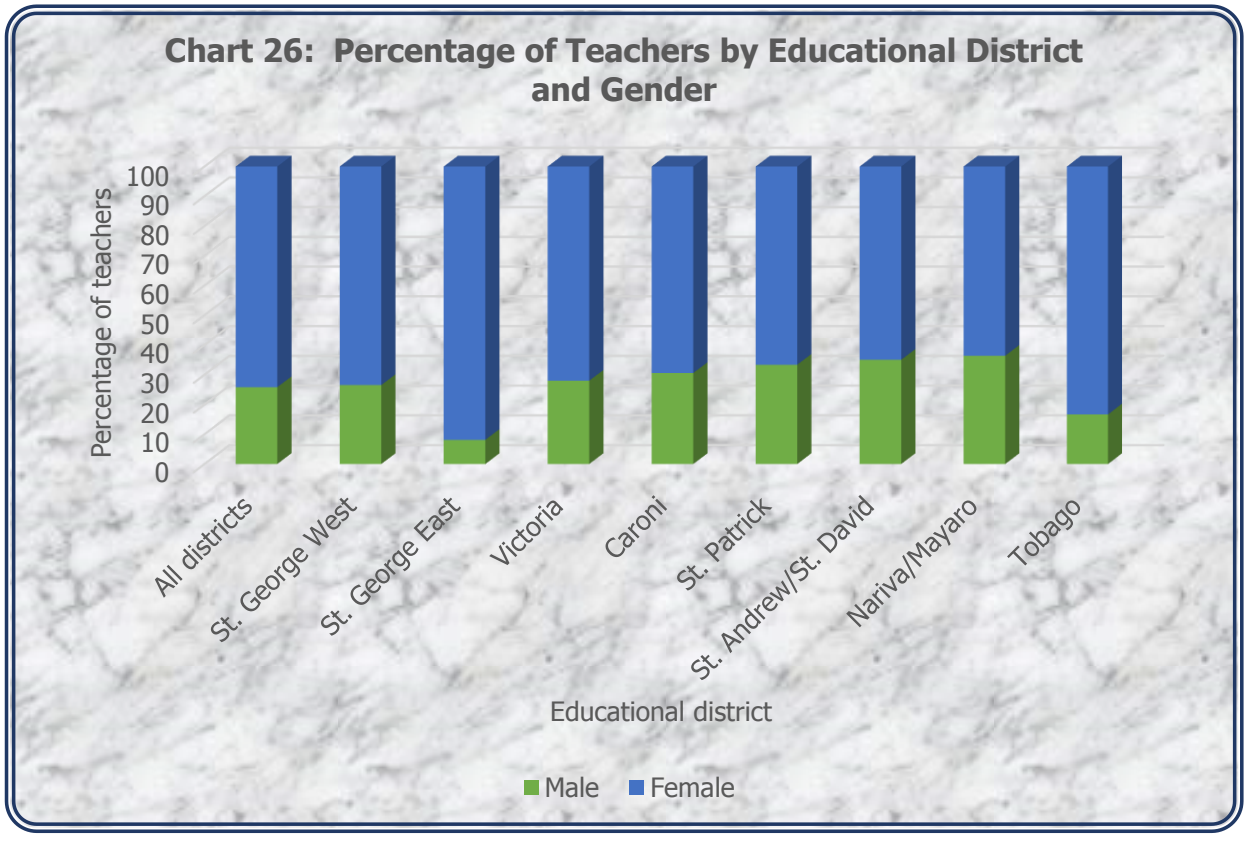


Table 29: Percentage of Teachers by Type of School and Gender

Type of school	Gender - percentage of teachers		
	Total	Male	Female
	(1)	(2)	(3)
All schools	100	26	74
Government	100	39	61
Government-assisted	100	22	78
Private	100	8	92

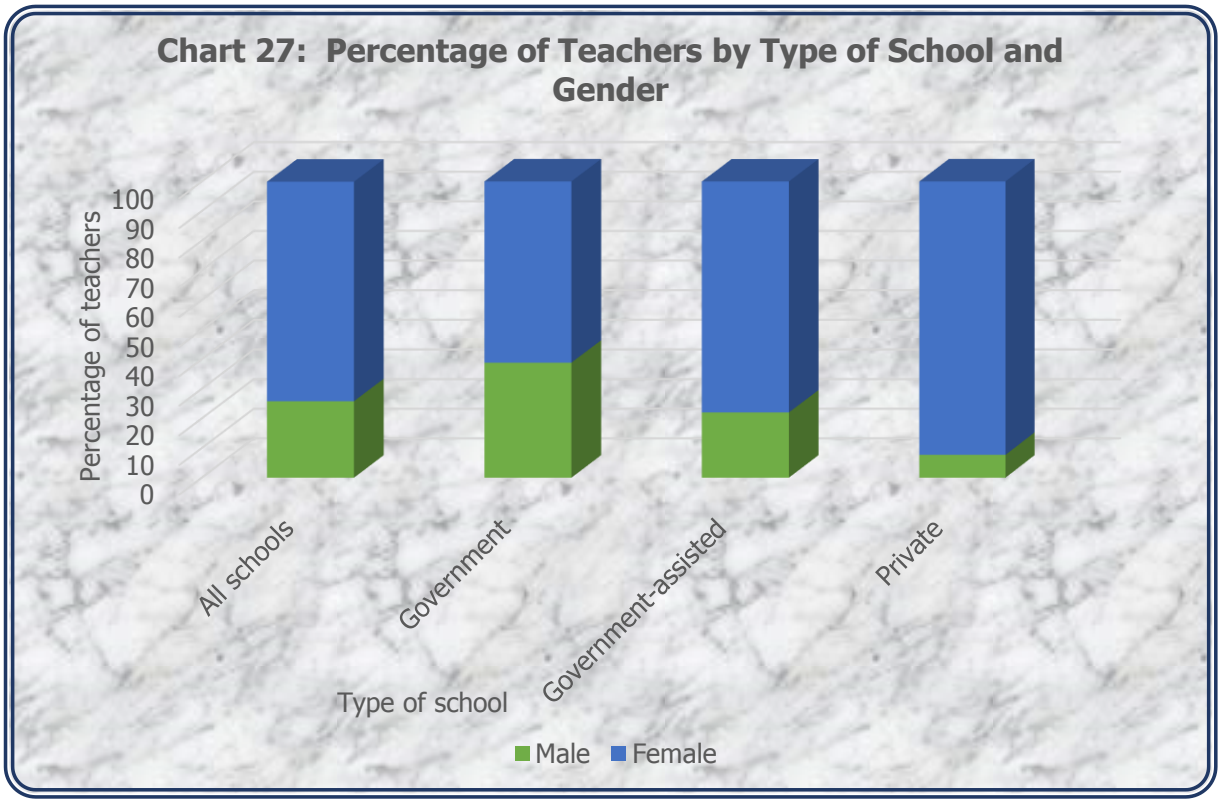


Table 30: Percentage of Teachers by Educational District and Age

Educational district	Age (years) - percentage of teachers					
	Total	20-29	30-39	40-49	50-59	60 and over
	(1)	(2)	(3)	(4)	(5)	(6)
All districts	100	9	37	38	15	1
St. George West	100	2	35	43	20	0
St. George East	100	11	30	41	16	3
Victoria	100	16	46	30	6	2
Caroni	100	6	33	39	22	0
St. Patrick	100	7	41	44	7	0
St. Andrew/St. David	100	10	35	40	15	0
Nariva/Mayaro	100	18	27	55	0	0
Tobago	100	17	39	17	28	0

In terms of age distribution, the largest percentage (38%) of teachers was observed in the 40 - 49 age group, followed by 37% in the 30 - 39 age category and 15% in the 50 - 59 age group. A review of the data by educational district shows that the largest proportion of teachers in each district were 40 - 49 years of age except in the districts of Victoria (46%) and Tobago (39%) which recorded a higher percentage of teachers in the 30 - 39 age group (Table 30). By type of school, the modal age of teachers in government (49%) and government-assisted (45%) schools was 40 - 49 and 30 - 39 years respectively, while over a half (54%) of the teachers in private schools were between 20 - 29 years (Table 31).

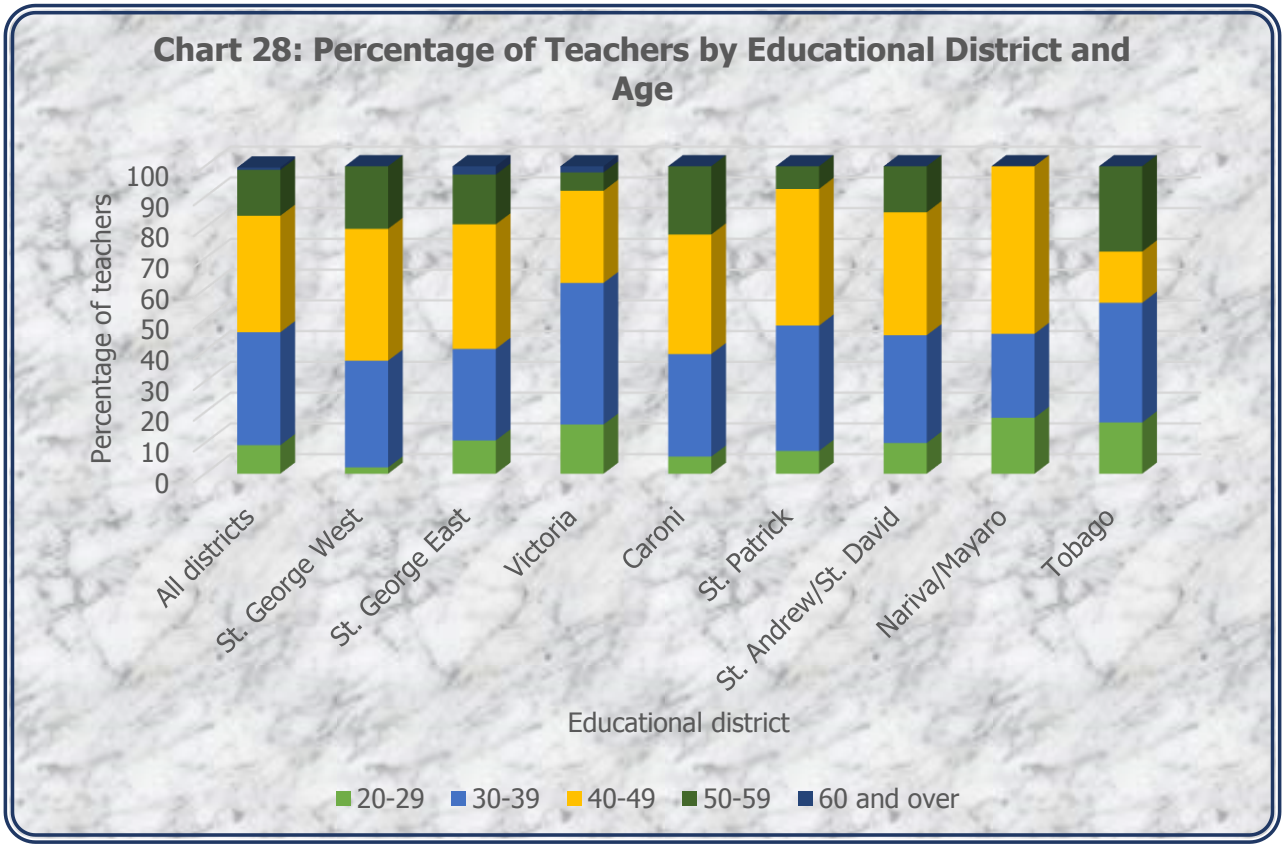


Table 31: Percentage of Teachers by Type of School and Age

Type of school	Age (years) - percentage of teachers					
	Total	20-29	30-39	40-49	50-59	60 and over
	(1)	(2)	(3)	(4)	(5)	(6)
All schools	100	9	37	38	15	1
Government	100	7	18	49	25	0
Government-assisted	100	7	45	36	12	0
Private	100	54	23	8	0	15

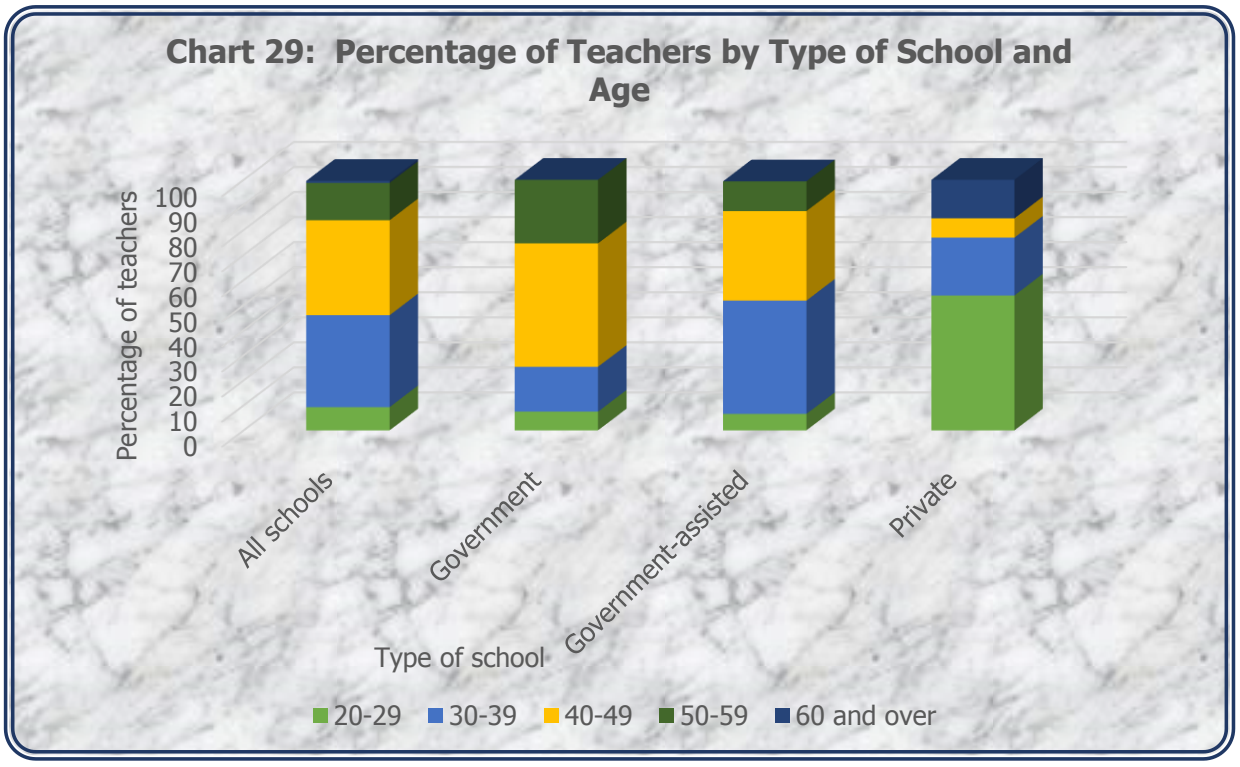


Table 32: Percentage of Teachers by Educational District and Highest Level of Education

Educational district	Highest level of education - percentage of teachers						
	Total	CSEC/O Levels	CAPE/A Levels	Associate degree	Bachelor's degree	Master's degree and above	Not stated
	(1)	(2)	(3)	(4)	(5)	(6)	(7)
All districts	100	9	11	5	65	9	1
St. George West	100	12	4	6	68	8	2
St. George East	100	14	11	8	59	8	0
Victoria	100	2	8	8	66	14	2
Caroni	100	14	8	3	67	6	3
St. Patrick	100	0	26	0	67	7	0
St. Andrew/St. David	100	15	25	0	60	0	0
Nariva/Mayaro	100	18	9	9	36	27	0
Tobago	100	6	0	0	83	11	0

A substantial percentage (65%) of the sample of teachers had a Bachelor's degree qualification while 11% completed CAPE and 9% possessed a Master's degree and above. By educational district, the highest percentage (94%) of teachers with a first degree or above was observed in Tobago followed by Victoria (80%) and St. George West (76%) (Table 32). A review of the data by type of school shows that a larger proportion of teachers in government-assisted schools (76%) had attained a university degree compared to their counterparts in government (72%) and private (69%) schools (Table 33). Additionally, of the teachers with a university degree, the majority (79%) majored in Education.

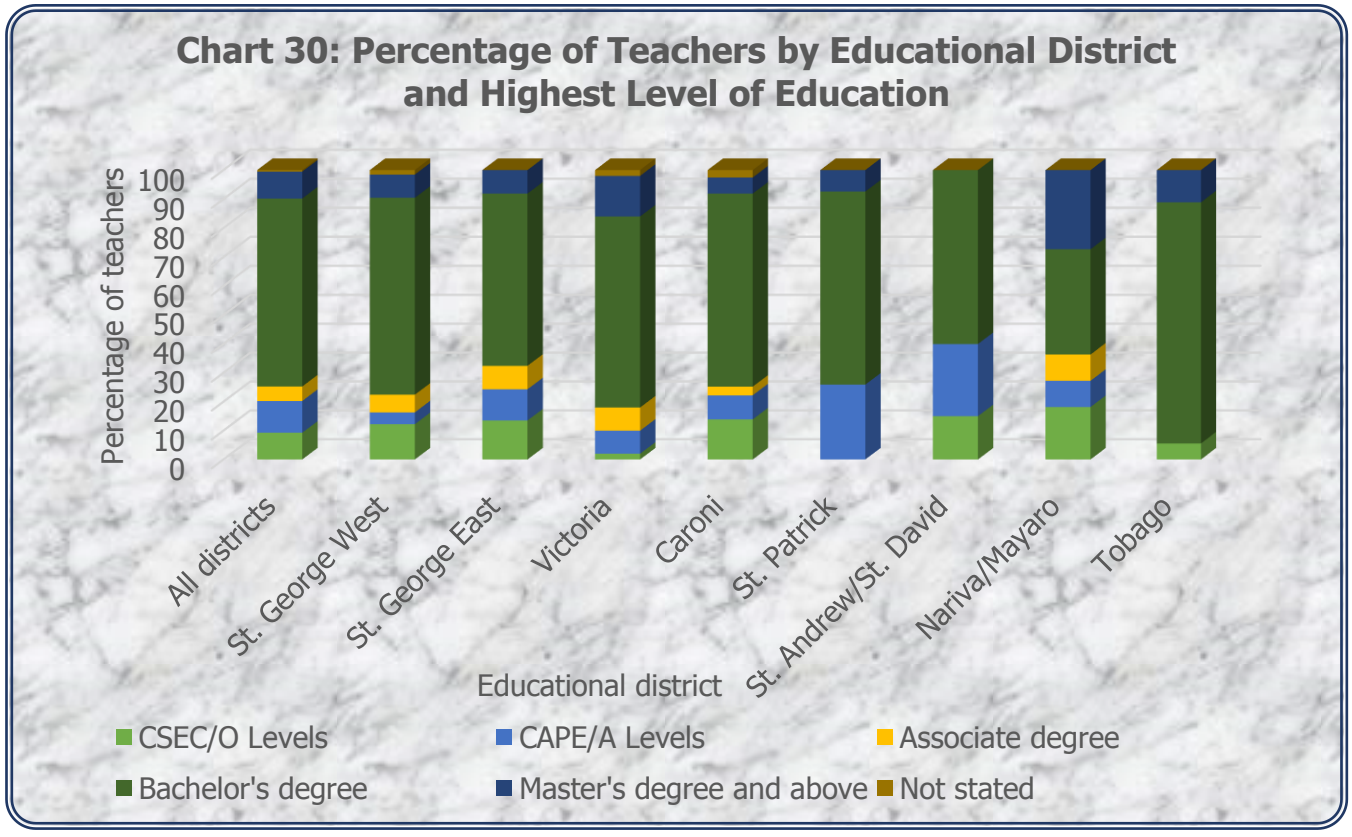


Table 33: Percentage of Teachers by Type of School and Highest Level of Education

Type of school	Highest level of education - percentage of teachers						
	Total	CSEC/O Levels	CAPE/A Levels	Associate degree	Bachelor's degree	Master's degree and above	Not stated
	(1)	(2)	(3)	(4)	(5)	(6)	(7)
All schools	100	9	11	5	65	9	1
Government	100	12	13	3	64	8	0
Government-assisted	100	8	10	5	65	11	2
Private	100	15	0	15	69	0	0

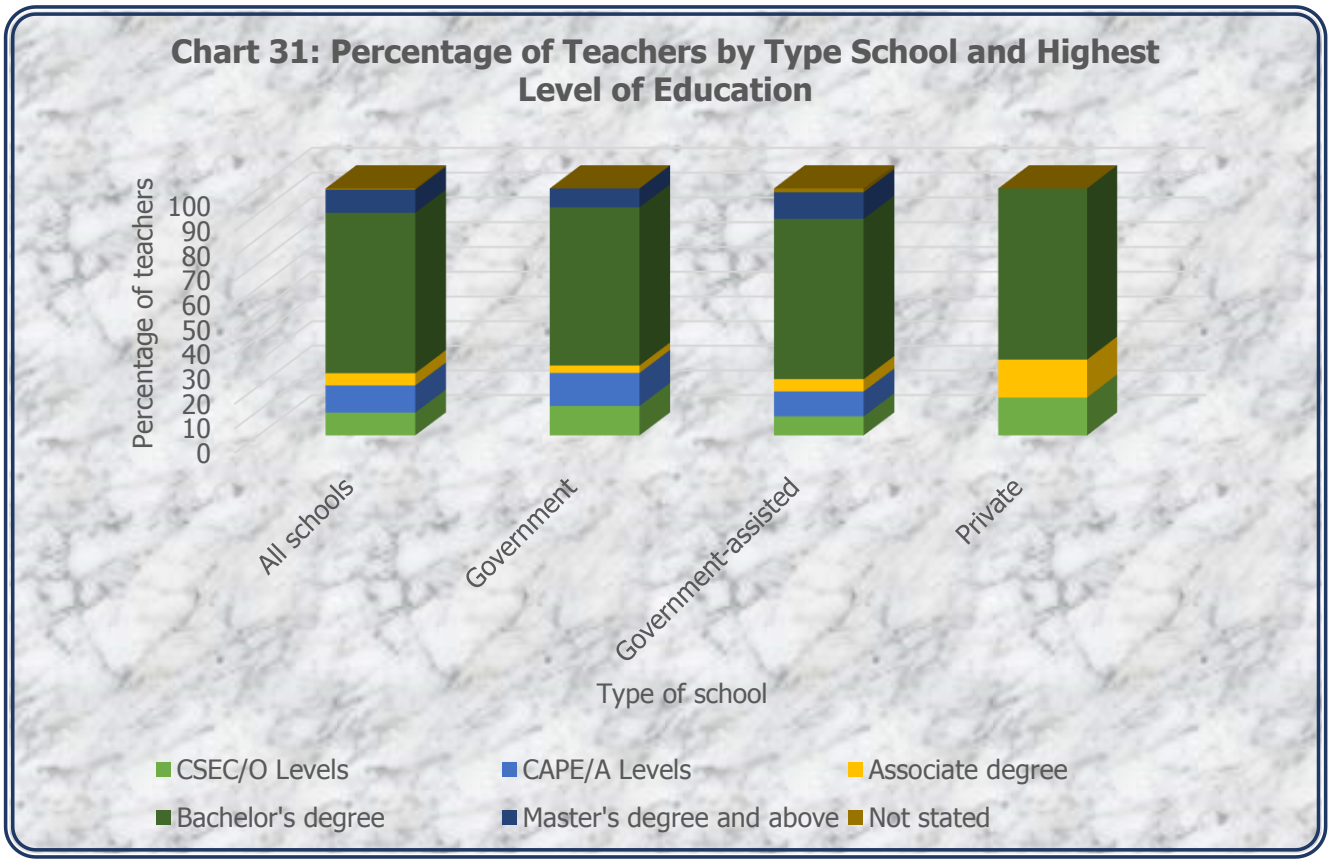


Table 34: Percentage of Teachers by Educational District and Highest Qualification in Education

Educational district	Highest qualification in education - percentage of teachers						
	Total	Teacher's diploma	Certificate in education	Diploma in education	B.Ed. degree	M.Ed. degree and above	None
	(1)	(2)	(3)	(4)	(5)	(6)	(7)
All districts	100	26	1	3	56	8	6
St. George West	100	18	2	6	59	6	8
St. George East	100	27	3	0	51	5	14
Victoria	100	22	0	2	58	16	2
Caroni	100	31	3	6	56	3	3
St. Patrick	100	41	0	0	48	7	4
St. Andrew/St. David	100	40	0	0	55	0	5
Nariva/Mayaro	100	27	0	9	36	27	0
Tobago	100	6	0	0	78	11	6

Over half (56%) of the sample of teachers had a B.Ed. degree while 26% possessed a teacher's diploma in education and 8% had a M.Ed. degree and above. A review of the data by educational district reveals that the largest proportion of teachers (89%) with a B.Ed. degree and above was recorded in Tobago followed by Victoria (74%) and St. George West (65%) (Table 34). A further examination of the data by type of school shows that a higher percentage of the teachers in government (97%) and government-assisted (96%) schools had obtained a professional qualification in education compared to their counterparts in private schools (54%) (Table 35).

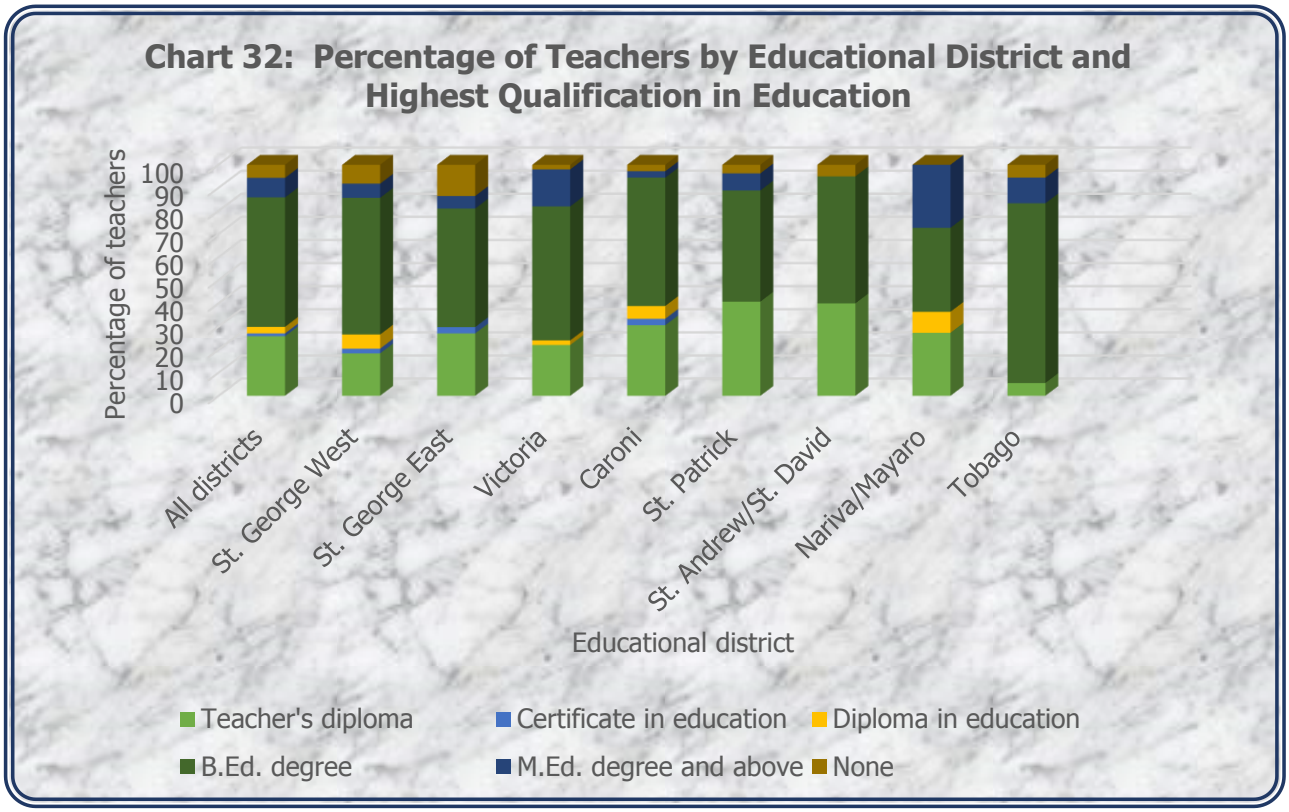


Table 35: Percentage of Teachers by Type of School and Highest Qualification in Education

Type of school	Highest qualification in education - percentage of teachers						
	Total	Teacher's diploma	Certificate in education	Diploma in education	B.Ed. degree	M.Ed. degree and above	None
	(1)	(2)	(3)	(4)	(5)	(6)	(7)
All schools	100	26	1	3	56	8	6
Government	100	28	3	1	57	8	3
Government-assisted	100	26	0	4	58	9	4
Private	100	8	8	0	31	8	46

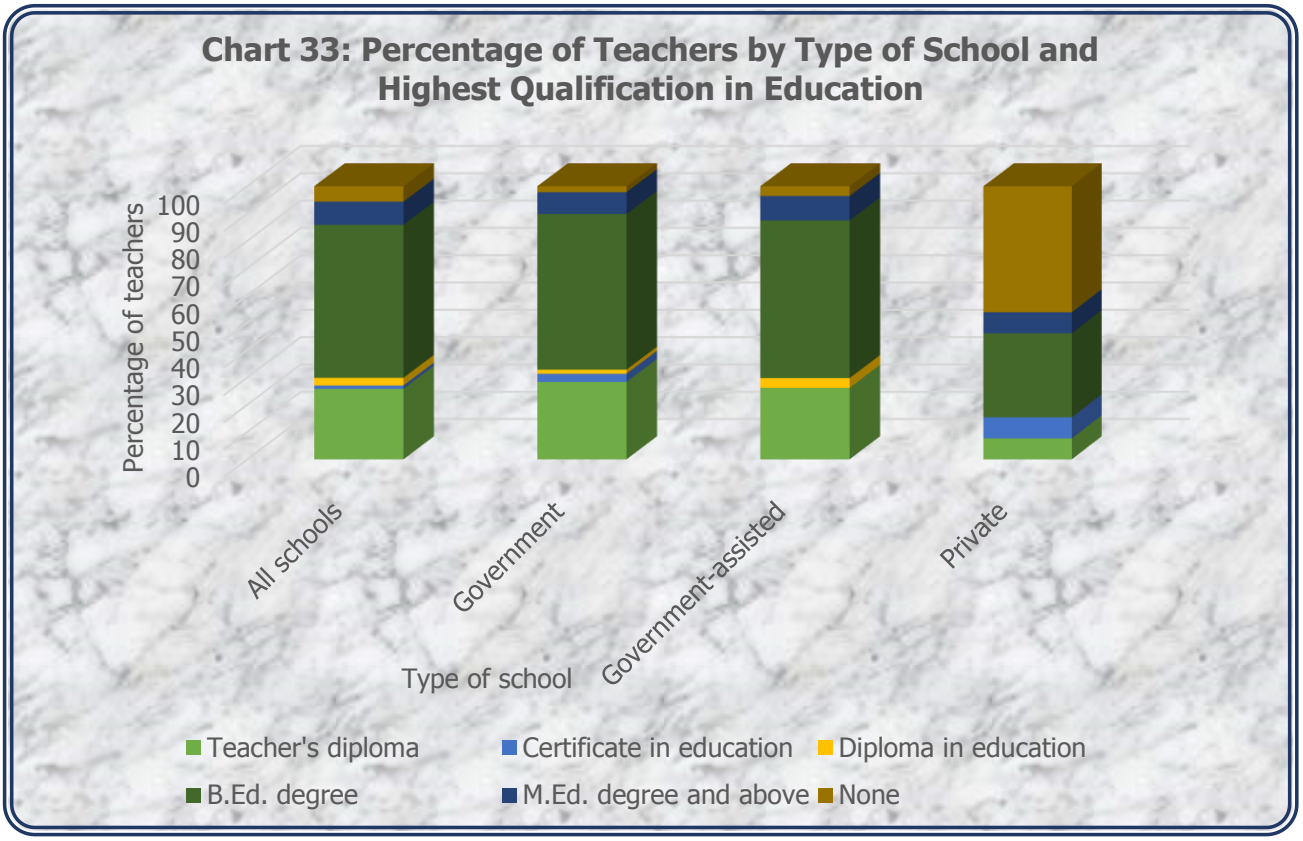


Table 36: Percentage of Teachers by Highest Qualification in Education - 2007 and 2017

Highest qualification in education	Year - percentage of teachers	
	2007	2017
	(1)	(2)
Total	100	100
Teacher's diploma	69	26
Certificate in Education	8	1
Diploma in Education	5	3
B.Ed. degree	8	56
M.Ed. degree and above	2	8
None	7	6
Not stated	1	0

Compared to a similar study undertaken in 2007, the data show an increase in teachers' qualification in education. The percentage of teachers with a B.Ed. degree increased from 8% in 2007 to 56% in 2017, while teachers with a M.Ed. qualification increased from 2% in 2007 to 8% in 2017.

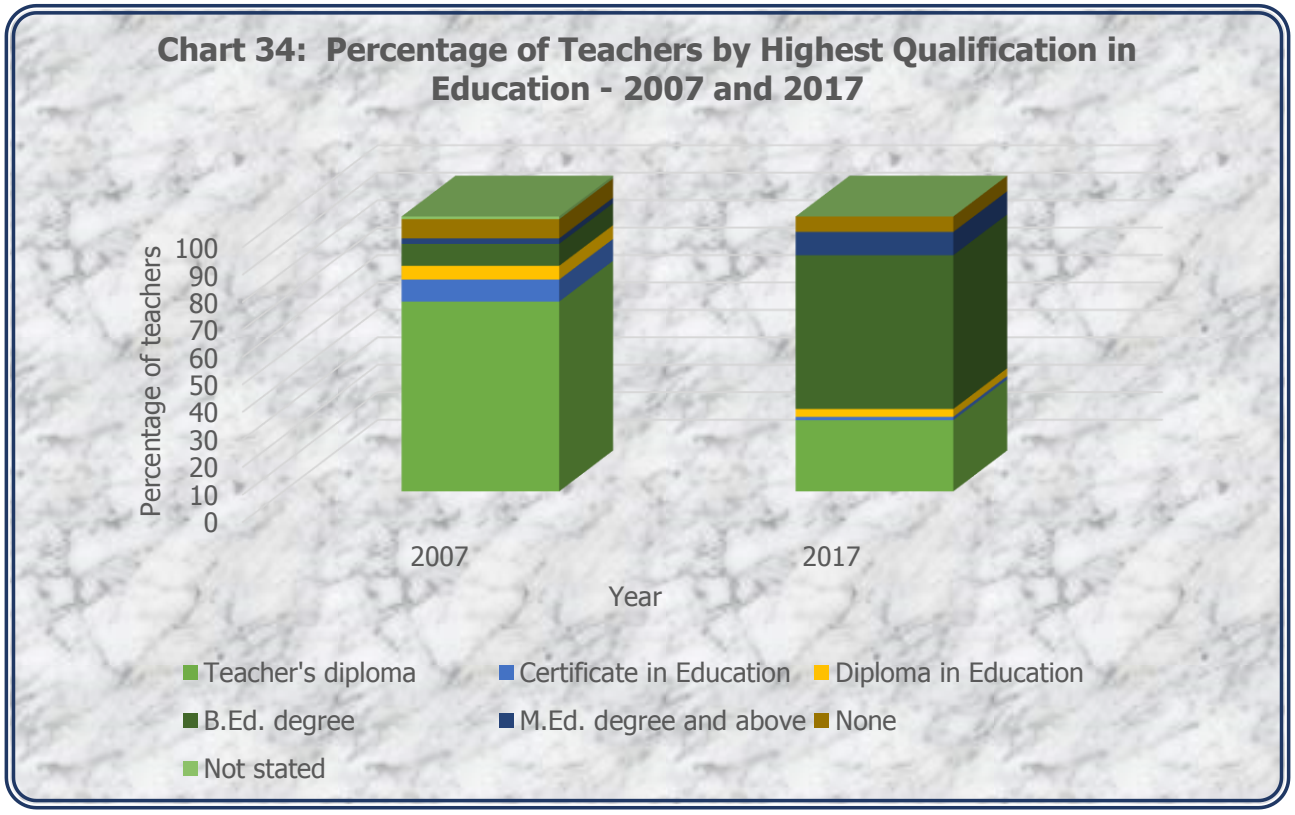


Table 37: Percentage of Teachers by Educational District and Highest Qualification in Mathematics

Educational district	Highest qualification in Mathematics - percentage of teachers					
	Total	O Level/ CSEC	A Level/ CAPE	Diploma in Education	Bachelor's degree	Not stated
	(1)	(2)	(3)	(4)	(5)	(6)
All districts	100	84	7	3	2	4
St. George West	100	78	6	10	4	2
St. George East	100	84	11	0	0	5
Victoria	100	84	8	4	2	2
Caroni	100	86	6	3	0	6
St. Patrick	100	89	11	0	0	0
St. Andrew/St. David	100	90	5	0	5	0
Nariva/Mayaro	100	73	0	0	0	27
Tobago	100	89	6	0	0	6

Overall, the majority (84%) of teachers surveyed reported an O Level/CSEC pass as their highest qualification in Mathematics while 7% obtained an A Level/CAPE pass and 3% and 2% possessed a diploma and bachelor's degree respectively.

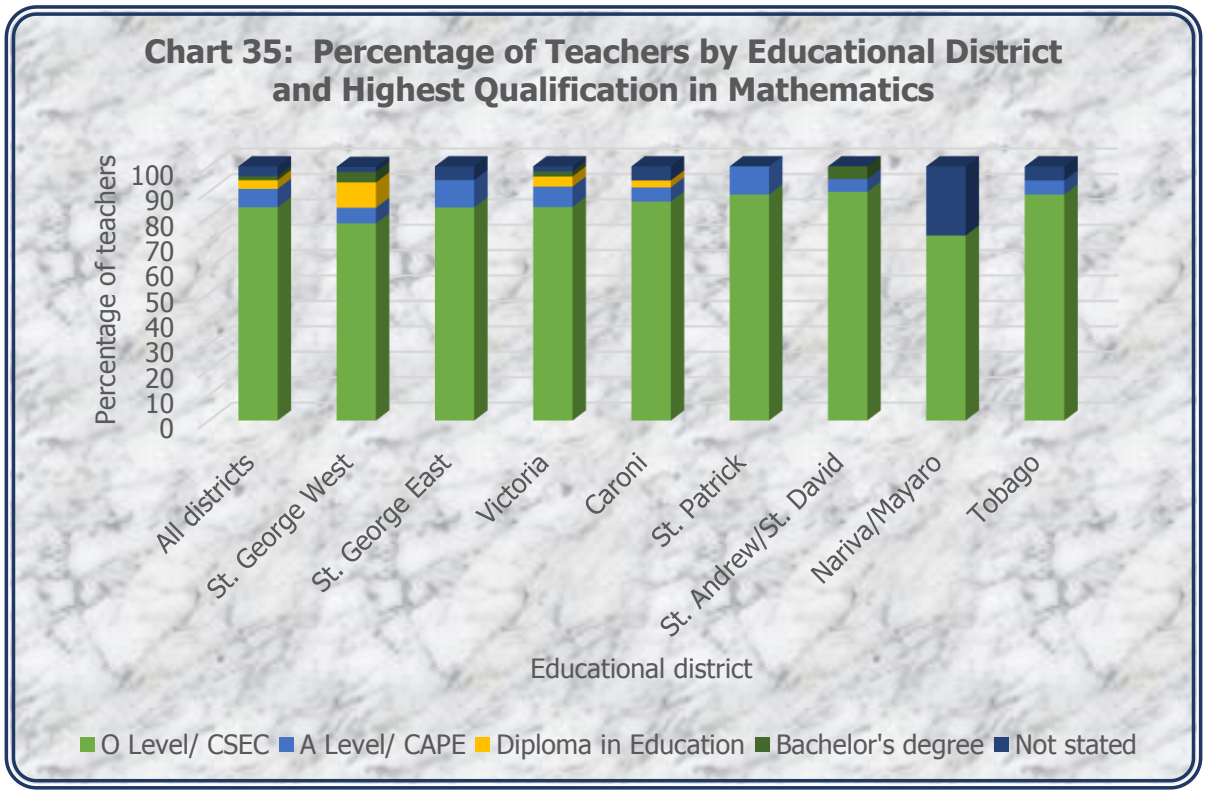


Table 38: Percentage of Teachers by Educational District and Length of Service

Educational district	Length of service - percentage of teachers				
	Total	Less than 5 years	5 - 9 years	10 - 14 years	15 years and over
	(1)	(2)	(3)	(4)	(5)
All districts	100	11	12	13	65
St. George West	100	8	14	10	67
St. George East	100	11	14	11	65
Victoria	100	14	10	8	68
Caroni	100	11	8	14	67
St. Patrick	100	7	15	19	59
St. Andrew/St. David	100	15	5	10	70
Nariva/Mayaro	100	9	9	27	55
Tobago	100	11	17	17	56

The majority (65%) of teachers who participated in the study reported service of 15 years and over. The data show a similar trend by educational district (Table 38). However, by type of school the survey results reveal that the majority of teachers in government (67%) and government-assisted (68%) schools reported teaching experience of 15 years and over while a substantial percentage (38%) of teachers in private primary schools reported 5 - 9 years of service (Table 39).

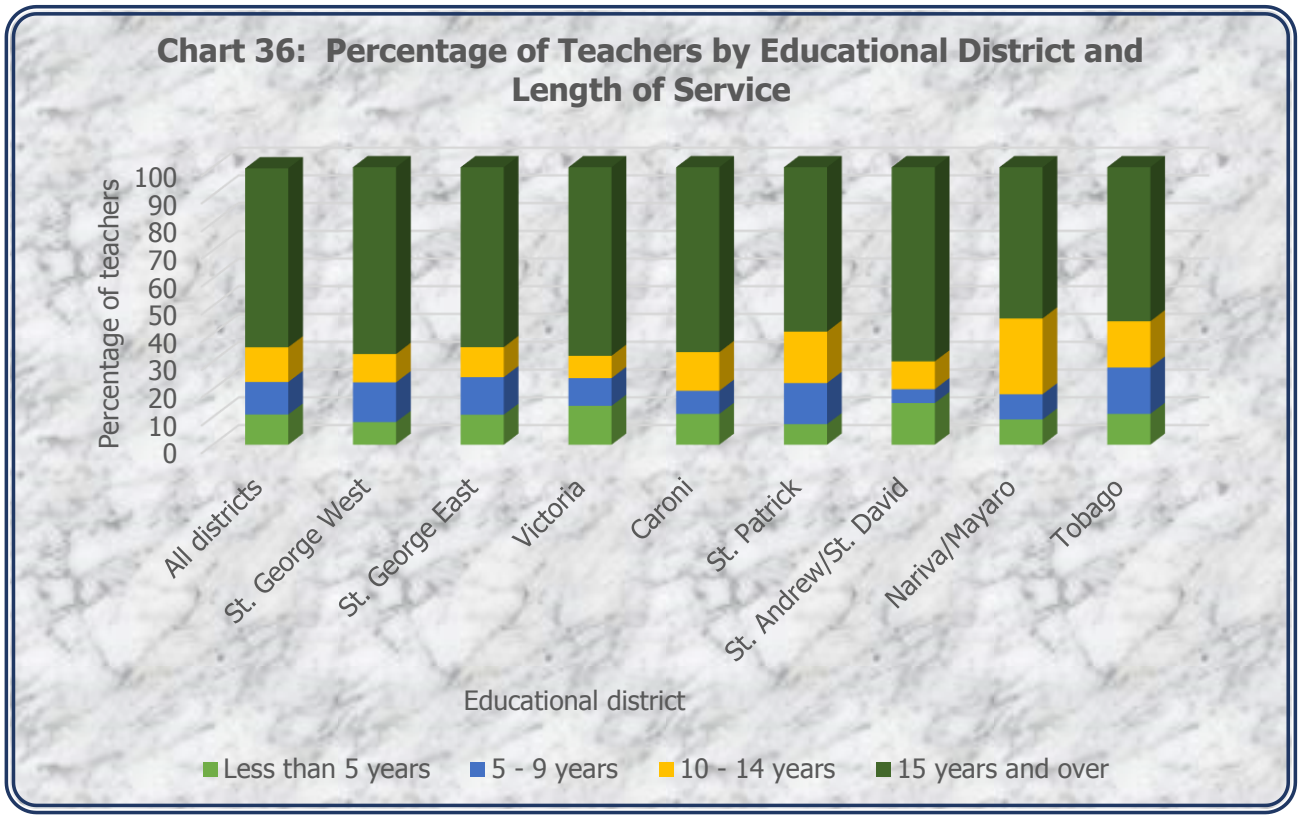


Table 39: Percentage of Teachers by Type of School and Length of Service

Type of school	Length of service - percentage of teachers				
	Total	Less than 5 years	5 - 9 years	10 - 14 years	15 years and over
	(1)	(2)	(3)	(4)	(5)
All schools	100	11	12	13	65
Government	100	13	12	7	67
Government-assisted	100	9	10	14	68
Private	100	23	38	23	15

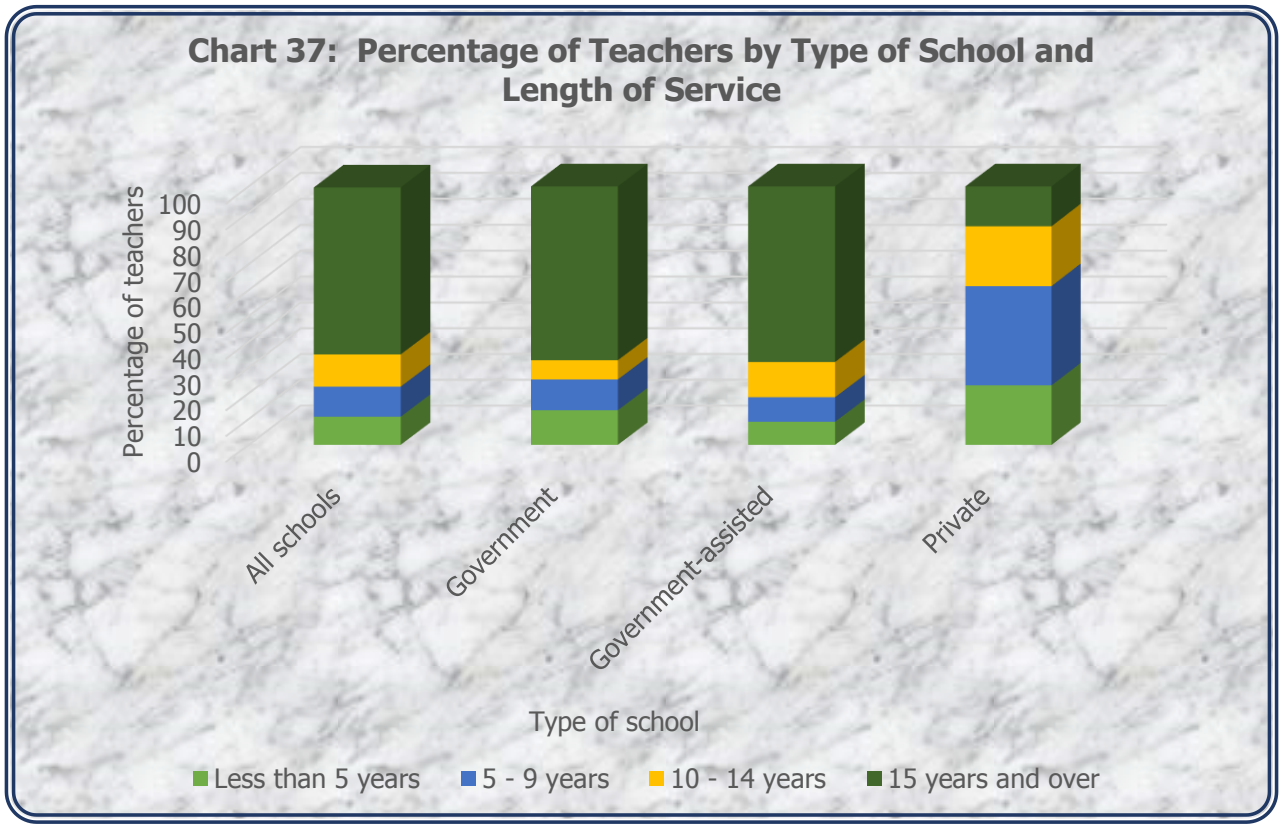


Table 40: Teaching as a First Choice Career by Educational District

Educational district	Teaching as a first choice career - percentage of teachers			
	Total	Yes	No	Not stated
	(1)	(2)	(3)	(4)
All districts	100	53	43	4
St. George West	100	41	59	0
St. George East	100	54	43	3
Victoria	100	62	38	0
Caroni	100	64	31	6
St. Patrick	100	56	41	4
St. Andrew/St. David	100	50	40	10
Nariva/Mayaro	100	45	45	9
Tobago	100	44	44	11

Over a half (53%) of the teachers stated that teaching was their first choice career while 43%, indicated that it was not. By educational district, the highest percentage (64%) of teachers who reported that teaching was their first choice career was observed in Caroni followed by Victoria (62%), while St. George West recorded the highest percentage (59%) of teachers who reported negatively (Table 40). A further review of the data by type of school reveals that a larger proportion (66%) of teachers in government schools stated that teaching was their first choice career compared to teachers in government-assisted (50%) and private (31%) schools (Table 41).

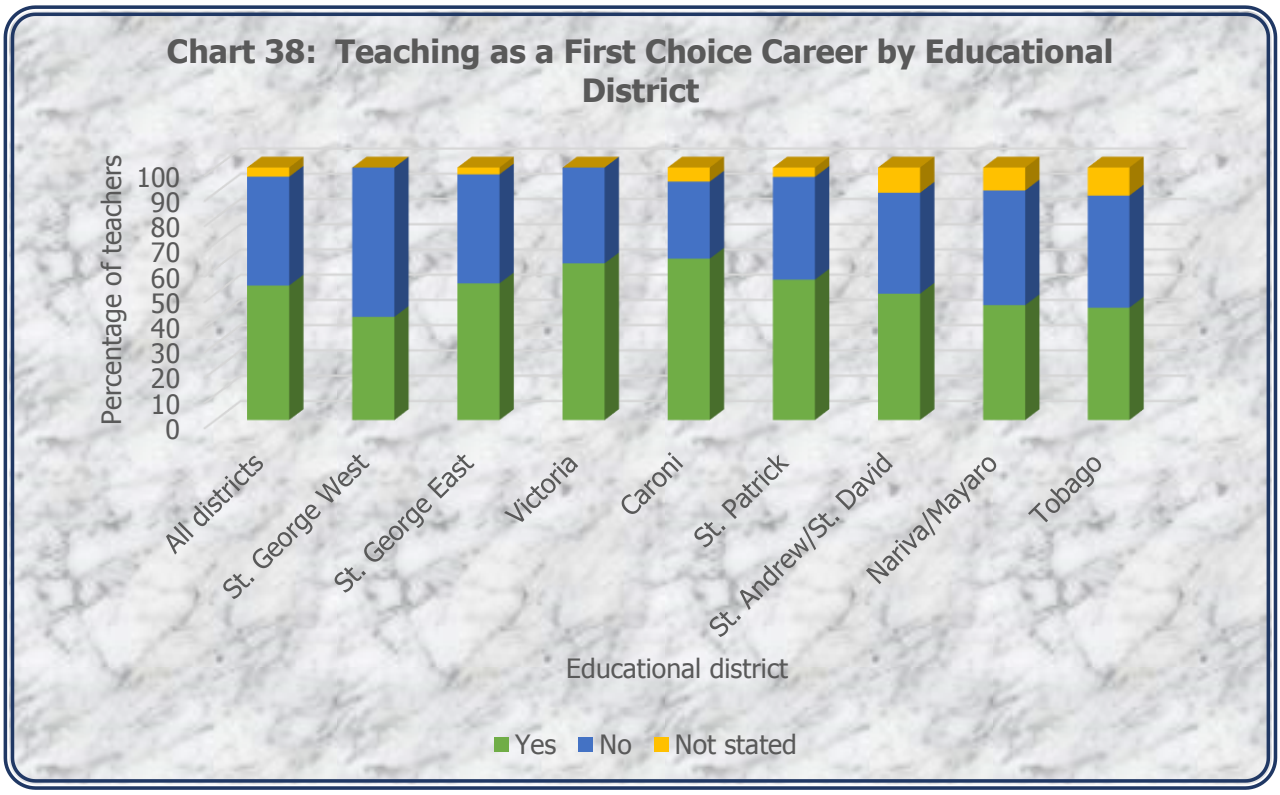


Table 41: Teaching as a First Choice Career by Type of School

Type of school	Teaching as a first choice career - percentage of teachers			
	Total	Yes	No	Not stated
	(1)	(2)	(3)	(4)
All schools	100	53	43	4
Government	100	66	30	4
Government-assisted	100	50	47	3
Private	100	31	62	8

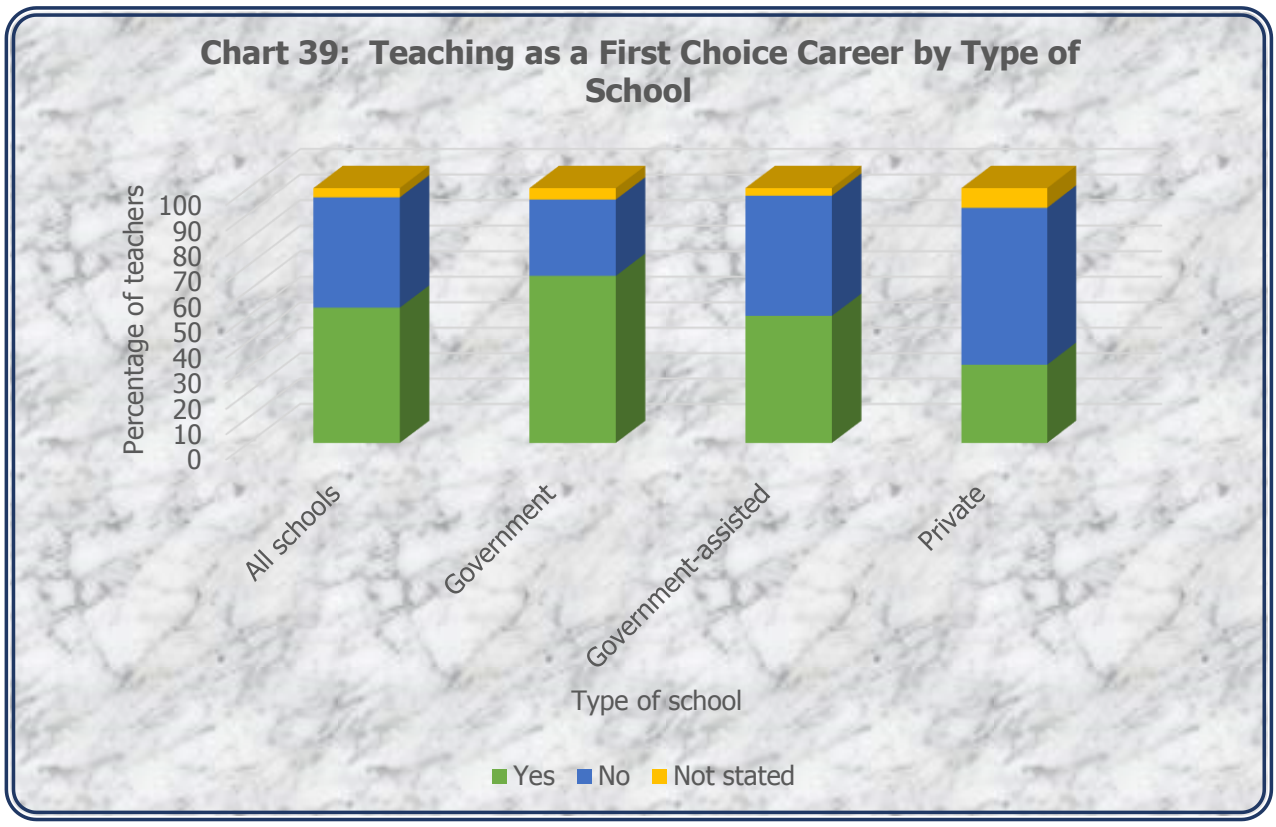
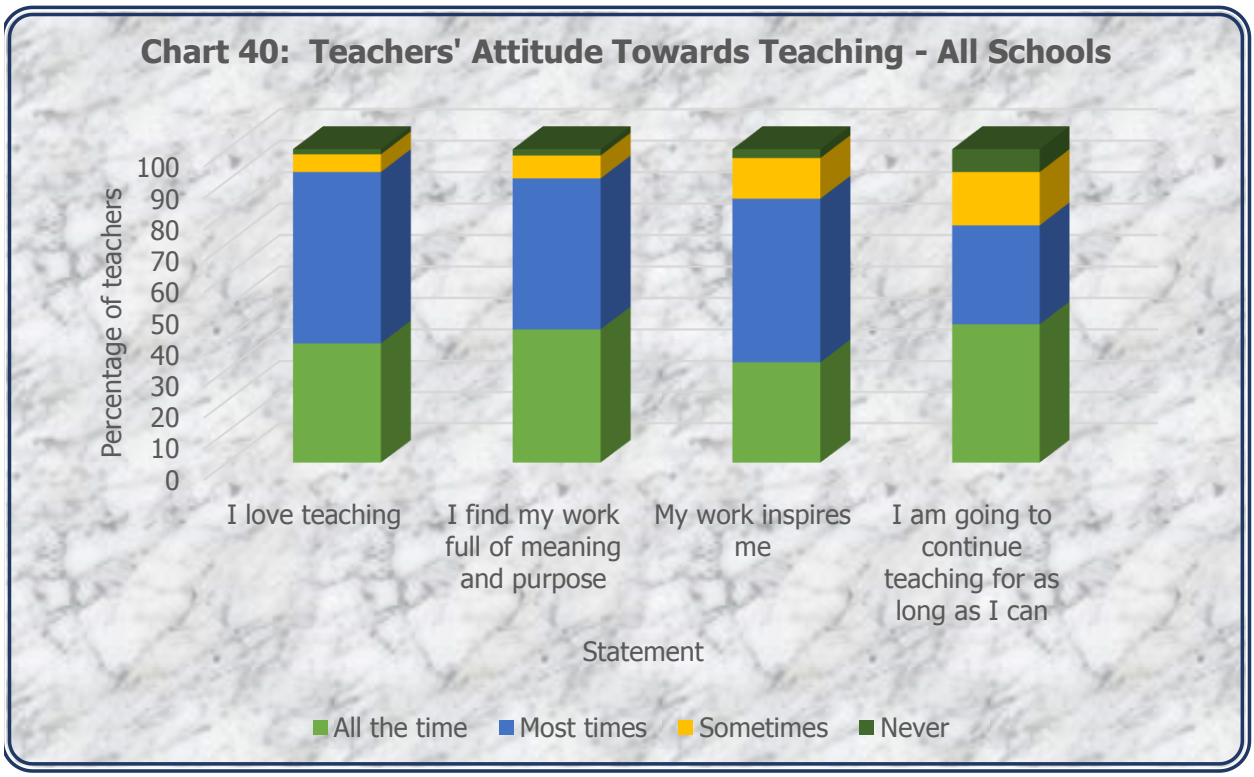


Table 42: Teachers' Attitude Towards Teaching by Educational District

Educational district	Statement	Frequency percentage of teachers				
		Total	All the time	Most times	Some times	Never
		(1)	(2)	(3)	(4)	(5)
All districts	I love teaching	100	38	54	6	2
	I find my work full of meaning and purpose	100	43	48	7	2
	My work inspires me	100	32	52	13	3
	I am going to continue teaching for as long as I can	100	44	31	17	7
St. George West	I love teaching	100	37	55	6	2
	I find my work full of meaning and purpose	100	31	55	10	4
	My work inspires me	100	18	63	12	6
	I am going to continue teaching for as long as I can	100	35	31	18	16
St. George East	I love teaching	100	46	49	3	3
	I find my work full of meaning and purpose	100	41	51	8	0
	My work inspires me	100	43	49	8	0
	I am going to continue teaching for as long as I can	100	49	27	22	3
Victoria	I love teaching	100	38	54	6	2
	I find my work full of meaning and purpose	100	46	46	4	4
	My work inspires me	100	38	50	8	4
	I am going to continue teaching for as long as I can	100	52	32	16	0
Caroni	I love teaching	100	39	56	3	3
	I find my work full of meaning and purpose	100	64	31	3	3
	My work inspires me	100	44	42	11	3
	I am going to continue teaching for as long as I can	100	56	28	8	8
St. Patrick	I love teaching	100	41	56	4	0
	I find my work full of meaning and purpose	100	52	44	4	0
	My work inspires me	100	44	44	11	0
	I am going to continue teaching for as long as I can	100	44	48	7	0
St. Andrew/ St David	I love teaching	100	40	60	0	0
	I find my work full of meaning and purpose	100	30	60	10	0
	My work inspires me	100	15	75	10	0
	I am going to continue teaching for as long as I can	100	45	30	20	5
Nariva/ Mayaro	I love teaching	100	9	73	18	0
	I find my work full of meaning and purpose	100	18	55	27	0
	My work inspires me	100	0	45	55	0
	I am going to continue teaching for as long as I can	100	27	27	27	18
Tobago	I love teaching	100	39	44	17	0
	I find my work full of meaning and purpose	100	44	50	6	0
	My work inspires me	100	28	44	22	6
	I am going to continue teaching for as long as I can	100	28	28	28	17

Table 42 shows the sample of teachers responses to statements on how they felt about their profession. Generally, teachers had a very positive attitude towards teaching with over three-quarters of the teachers indicating that they identified 'all the time' and 'most times' with the four statements about teaching. Forty-four percent (44%) of the teachers stated that they felt that they would continue teaching for as long as they can 'all the time' while 31% had a similar view 'most times'. Over a half of the teachers stated that they loved teaching (54%) and that their work inspired them (52%) 'most times'. By educational district, the highest percentage of teachers who felt that their work was full of meaning and purpose (64%) and that they were going to continue teaching as long as they could (56%) 'all the time' was observed in the district of Caroni. A relatively larger proportion of teachers in St. George East (46%) and government schools (52%) stated that they identified with the statement 'I love teaching' 'all the time' compared to their counterparts in the other districts and types of schools (Tables 42 and 43). Additionally, the lowest percentage of teachers who identified with the four statements about teaching was observed in the district of Nariva/Mayaro and government-assisted schools.



Source: Table 42

Table 43: Teachers' Attitude Towards Teaching by Type of School

Type of school	Statement	Rating - percentage of teachers				
		Total	All the time	Most times	Some-times	Never
		(1)	(2)	(3)	(4)	(5)
All schools	I love teaching	100	38	54	6	2
	I find my work full of meaning and purpose	100	43	48	7	2
	My work inspires me	100	32	52	13	3
	I am going to continue teaching for as long as I can	100	44	31	17	7
Government	I love teaching	100	52	43	3	1
	I find my work full of meaning and purpose	100	54	39	4	3
	My work inspires me	100	39	49	9	3
	I am going to continue teaching for as long as I can	100	54	22	19	4
Government-assisted	I love teaching	100	32	60	7	1
	I find my work full of meaning and purpose	100	36	53	9	2
	My work inspires me	100	29	54	15	3
	I am going to continue teaching for as long as I can	100	40	35	15	9
Private	I love teaching	100	46	46	0	8
	I find my work full of meaning and purpose	100	69	31	0	0
	My work inspires me	100	46	46	8	0
	I am going to continue teaching for as long as I can	100	46	31	23	0

Table 44: Number of Students/Class by Educational District

Educational district	Number of students - percentage of teachers					
	Total	Less than 10	10 - 19	20 - 29	30 - 39	Not stated
	(1)	(2)	(3)	(4)	(5)	(6)
All districts	100	8	40	45	6	1
St. George West	100	4	41	47	6	2
St. George East	100	3	41	49	8	0
Victoria	100	6	38	44	12	0
Caroni	100	3	33	53	6	6
St. Patrick	100	0	44	56	0	0
St. Andrew/St. David	100	30	35	35	0	0
Nariva/Mayaro	100	27	55	9	9	0
Tobago	100	17	50	33	0	0

A substantial percentage of teachers reported a class size of 20 - 29 students (45%) and 10 - 19 students (40%). By educational district, over a half of the teachers in Caroni (58%), St. George East (57%), Victoria (56%), St. Patrick (56%) and St. George West (53%) had a class of 20 students and over, while the majority of teachers in the Nariva/Mayaro (82%), Tobago (67%) and St. Andrew/St. David (65%) districts recorded less than 20 students in their classes.

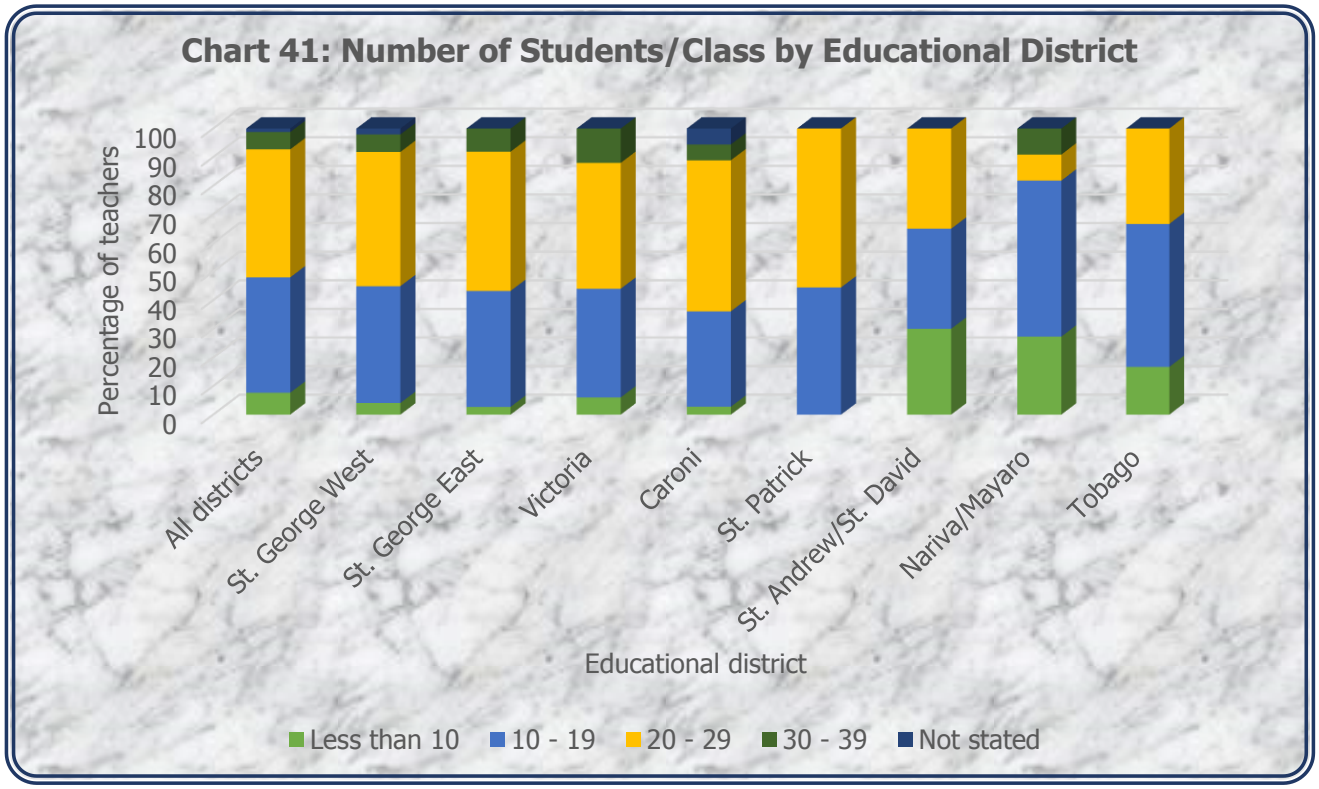
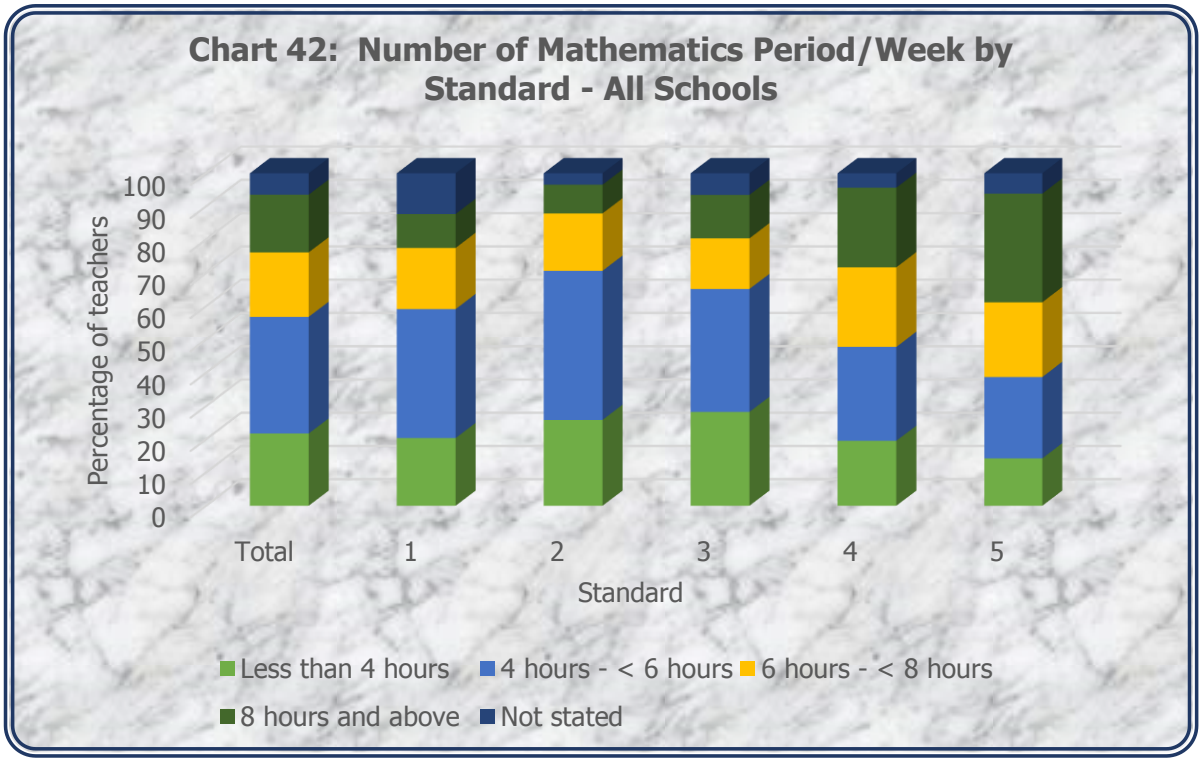


Table 45: Number of Mathematics Periods/Week by Type of School and Standard

Type of school	Standard	Hours of Mathematics per week - percentage of teachers					
		Total	Less than 4 hours	4 hours - < 6 hours	6 hours - < 8 hours	8 hours and above	Not stated
		(1)	(2)	(3)	(4)	(5)	(6)
All schools	Total	100	22	35	19	17	6
	Standard 1	100	20	39	18	10	12
	Standard 2	100	26	45	17	9	3
	Standard 3	100	28	37	15	13	7
	Standard 4	100	20	28	24	24	4
	Standard 5	100	14	24	22	33	6
Government	Total	100	19	37	16	22	4
	Standard 1	100	21	43	21	7	7
	Standard 2	100	7	57	14	21	0
	Standard 3	100	31	38	8	15	8
	Standard 4	100	17	33	17	33	0
	Standard 5	100	21	14	21	36	7
Government-assisted	Total	100	21	34	21	17	7
	Standard 1	100	16	38	19	13	16
	Standard 2	100	30	40	20	5	5
	Standard 3	100	26	35	19	13	6
	Standard 4	100	22	25	25	22	6
	Standard 5	100	12	30	21	33	3
Private	Total	100	38	38	15	0	8
	Standard 1	100	67	33	0	0	0
	Standard 2	100	50	50	0	0	0
	Standard 3	100	50	50	0	0	0
	Standard 4	100	0	50	50	0	0
	Standard 5	100	0	0	50	0	50

Table 45 reveals that 35% of the teachers taught their classes 4 - <6 hours of Mathematics each week while 22% and 19% reported less than 4 hours and 6 - <8 hours of Mathematics respectively. The survey results show a positive relationship between the number of Mathematics period taught per week and the Standard level. An examination of the data by type of school shows that teachers in public primary schools taught Mathematics more often than their counterparts in private primary schools.



Source: Table 45

Table 46: Methods of Teaching Mathematics

Method	Frequency - percentage of teachers				
	Total	Every lesson	Most lessons	Some lessons	Never
	(1)	(2)	(3)	(4)	(5)
1 Relate the lesson to students' daily lives	100	25	56	16	2
2 Ask students to explain their answers	100	44	43	13	1
3 Ask students to listen to you explain new Mathematics content	100	61	22	16	2
4 Ask students to listen to you explain how to solve problems	100	50	24	23	3
5 Ask students to decide their own problem solving procedures	100	15	41	38	7
6 Ask students to complete challenging exercises that require them to go beyond the instruction	100	10	33	54	4
7 Encourage classroom discussions among students	100	34	37	28	1
8 Ask students to work in groups	100	10	34	53	2
9 Encourage students to express their ideas in class	100	42	42	15	2
10 Differentiate instruction to meet learners' needs i.e. tailoring instruction to meet individual needs	100	21	42	34	3

Table 47 above shows how often teachers used different methods of teaching in their Mathematics classes. Of the methods listed above, the most frequently used by teachers in every lesson was 'ask students to listen to you explain new Mathematics content' (61%), followed by 'ask students to listen to you explain how to solve problems' (50%). Most of the teachers who participated in the survey, 93% and above, used all of the methods at least sometimes.

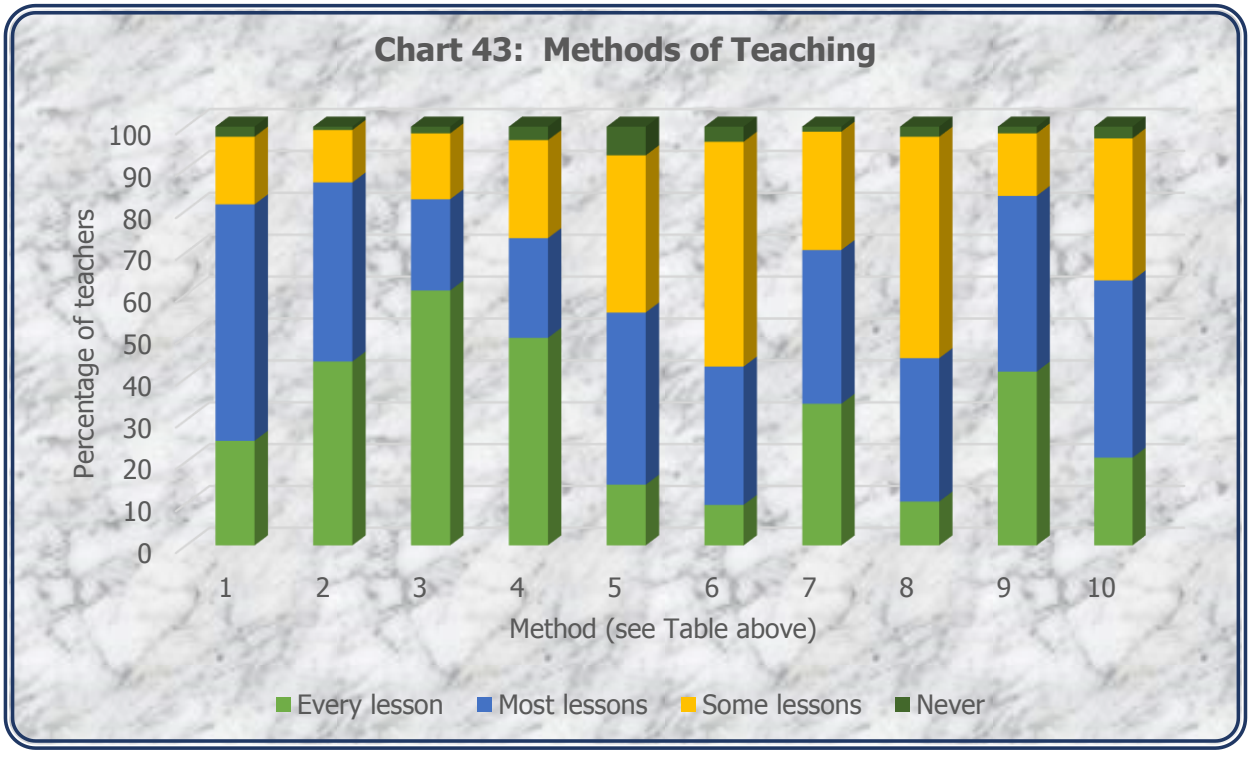


Table 47: Mathematics is a Hands-on Subject

Educational district	Mathematics is a hands-on subject - percentage of teachers			
	Total	Yes	No	Not stated
	(1)	(2)	(3)	(4)
All districts	100	97	2	1
St. George West	100	98	2	0
St. George East	100	95	5	0
Victoria	100	98	0	2
Caroni	100	97	0	3
St. Patrick	100	93	7	0
St. Andrew/St. David	100	95	0	5
Nariva/Mayaro	100	100	0	0
Tobago	100	100	0	0

Almost all (97%) of the teachers, especially in the Nariva/Mayaro (100%) and Tobago (100%) districts, agreed that Mathematics was a hands-on subject.

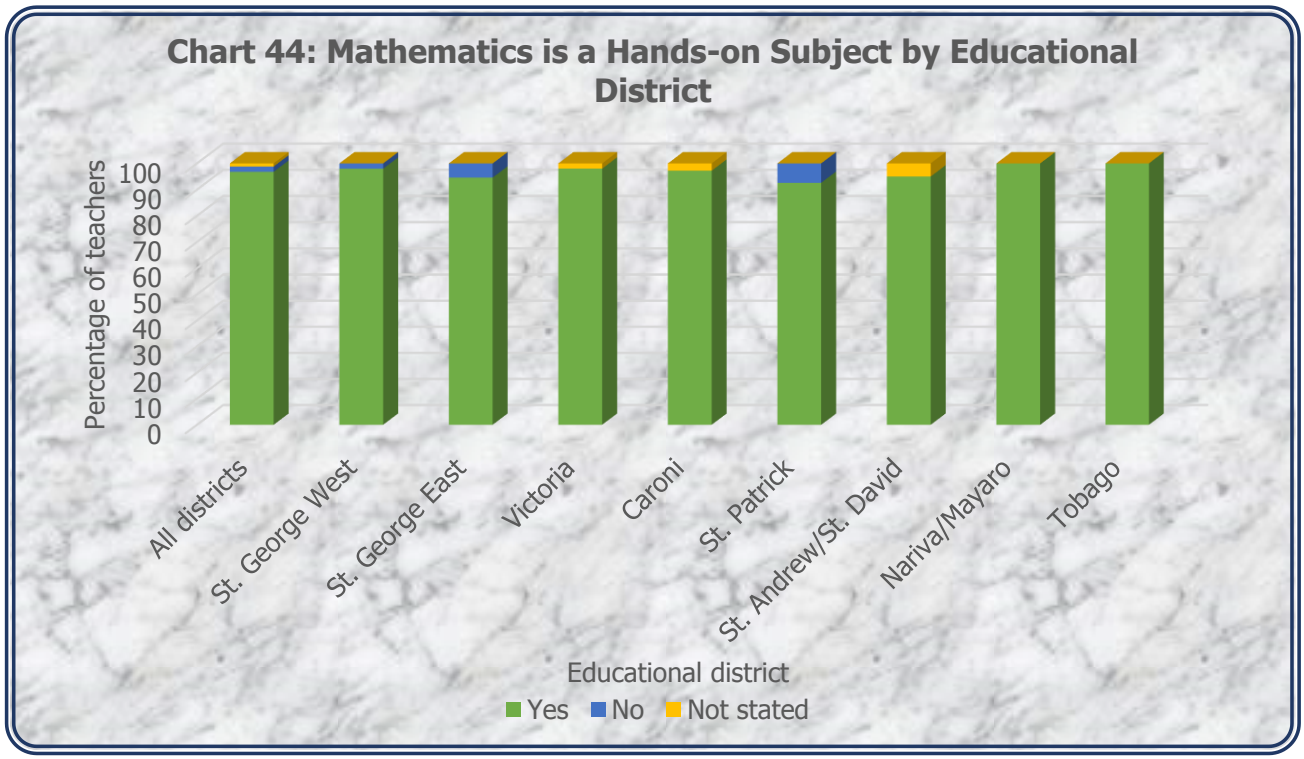


Table 48: Suitable Mathematics Resources Available in Schools by Educational District

Educational district	Suitable Mathematics resources available percentage of teachers					
	Total	Strongly agree	Agree	Disagree	Strongly disagree	Not stated
	(1)	(2)	(3)	(4)	(5)	(6)
All districts	100	19	64	13	2	3
St. George West	100	24	53	22	0	0
St. George East	100	30	59	3	0	8
Victoria	100	10	68	16	4	2
Caroni	100	19	67	11	3	0
St. Patrick	100	11	78	7	0	4
St. Andrew/St. David	100	20	70	10	0	0
Nariva/Mayaro	100	0	82	9	0	9
Tobago	100	22	50	11	6	11

A significant percentage (83%) of the sample of teachers agreed (Cols 2+3) that there were suitable Mathematics resources available in their schools. By educational district, the highest percentage of teachers who agreed that there were suitable Mathematics resources at their schools was observed in the St. Andrew/St. David district (90%), followed closely by St George East (89%) and St. Patrick (89%). The highest percentage of teachers who disagreed was recorded in St. George West (22%) (Table 48). A review of the data by type of school shows that a larger proportion (88%) of teachers in government-assisted schools agreed that there were suitable Mathematics resources available at their schools compared to teachers in private (77%) and government (72%) schools (Table 49).

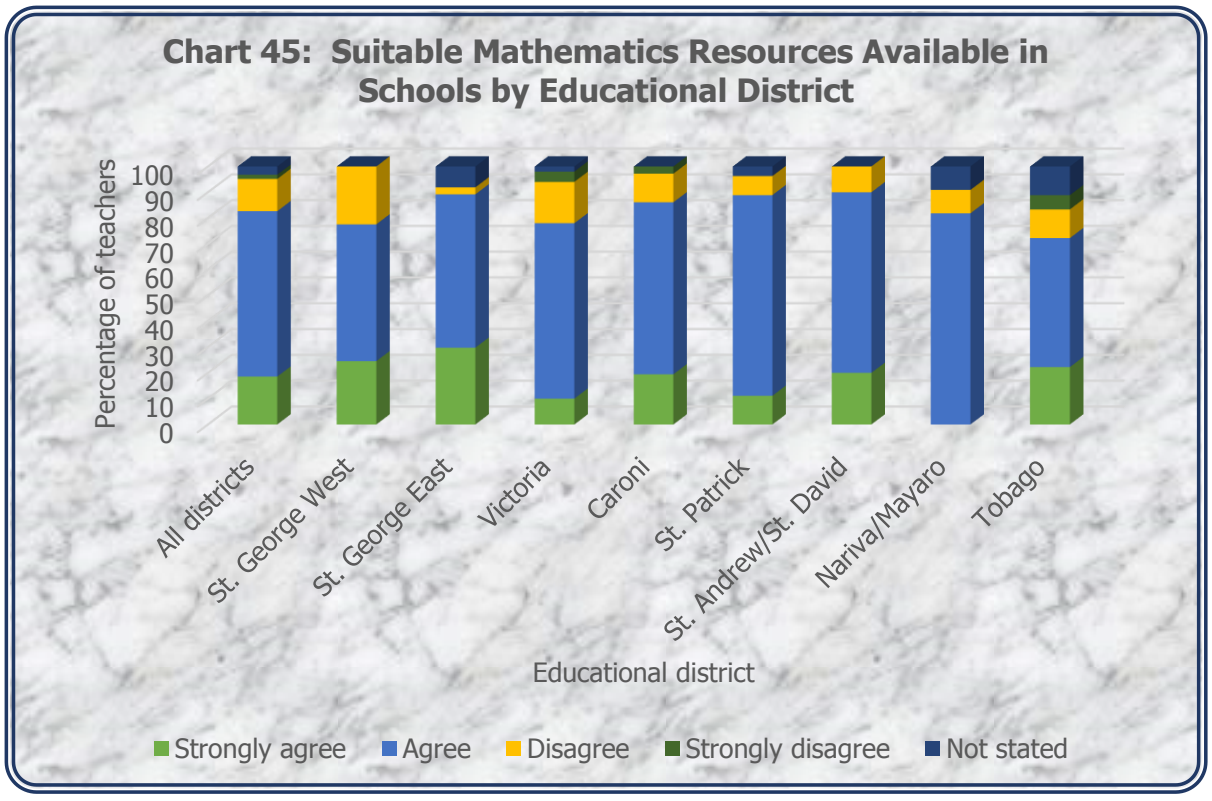


Table 49: Suitable Mathematics Resources Available in Schools by Type of School

Type of school	Suitable Mathematics resources available percentage of teachers					
	Total	Strongly agree	Agree	Disagree	Strongly disagree	Not stated
	(1)	(2)	(3)	(4)	(5)	(6)
All schools	100	19	64	13	2	3
Government	100	12	60	21	3	4
Government-assisted	100	21	67	9	1	2
Private	100	23	54	15	0	8

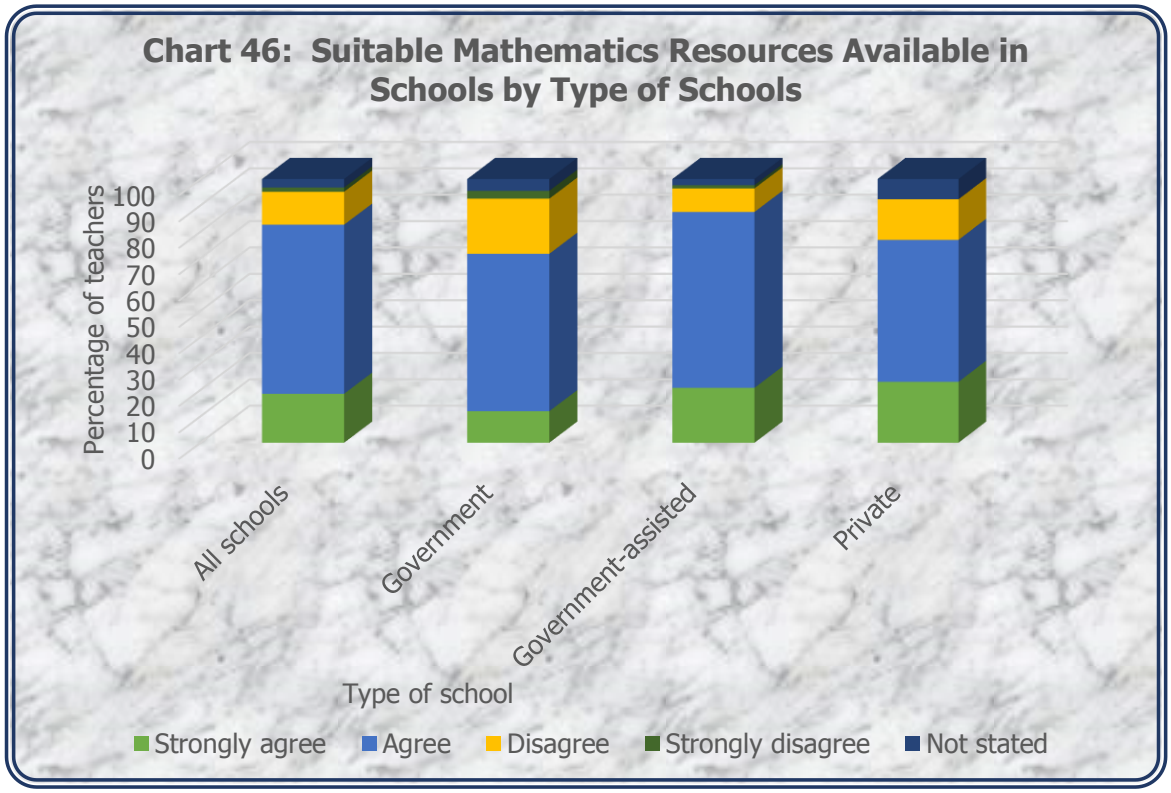


Table 50: Use of Resources to Develop Scheme of Work

Resource	Used to develop scheme of work - percentage of teachers		
	Total	Yes	No
	(1)	(2)	(3)
Curriculum	100	97	3
Textbook	100	74	26
Internet	100	63	37
Other	100	22	78

Table 50 shows the resources teachers used to develop their scheme of work. The most common resource used was the curriculum (97%) followed by textbooks (74%) and the Internet (63%). Additionally, 22% of the teachers indicated that they used other resources, mainly the needs of students (7%) and manipulatives available (7%), to develop their scheme of work.

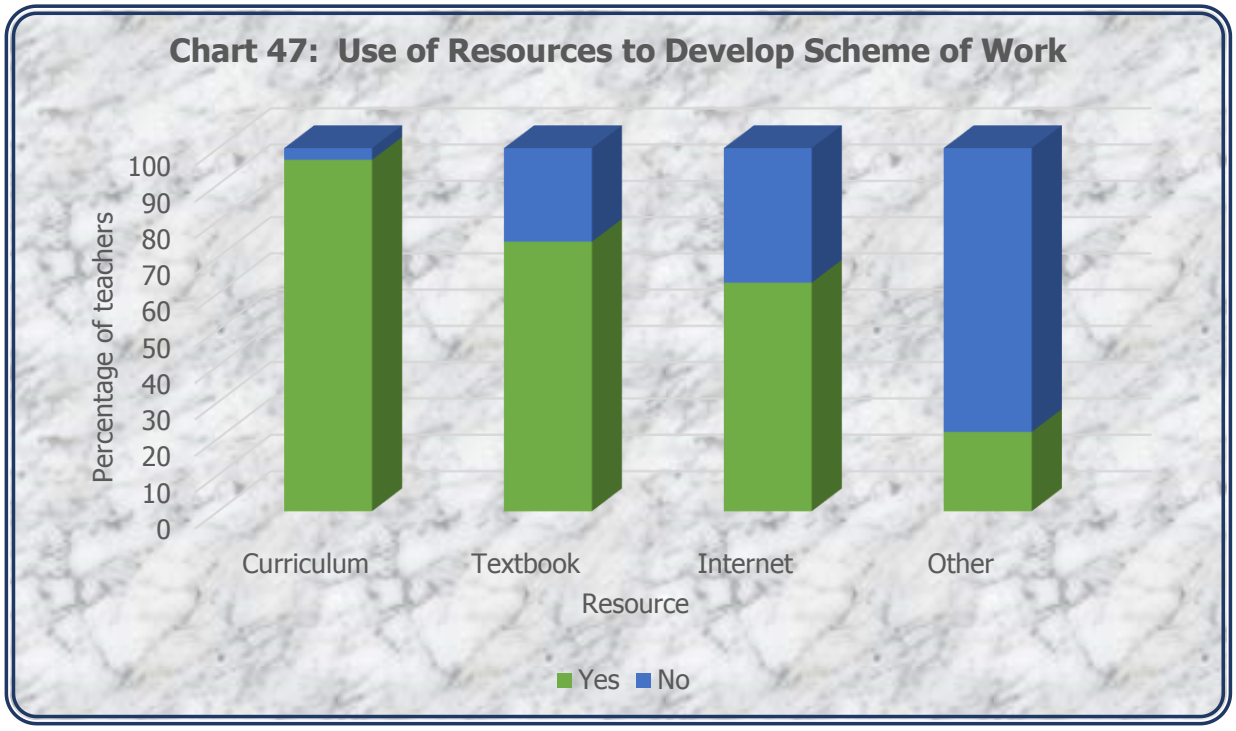


Table 51: Use of Resources in Mathematics Class

Resource	Used in Mathematics class - percentage of teachers	
	Yes	No
	(1)	(2)
Concrete resources	97	3
Textbooks	94	6
ICT	51	49
Worksheets	97	3
Other	9	91

Most of the teachers who participated in the survey used concrete resources (97%), worksheets (97%) and textbooks (94%) in their Mathematics class while 51% used ICT (Table 51). Concrete resources were mainly used to help develop concepts (34%) and to help teach specific topics (27%) (Table 52). A larger proportion of the teachers used textbooks for reinforcement (39%) and exercises/homework (35%), while 30% used worksheets for assessment/evaluation. Of the teachers who used ICT in their Mathematics class, approximately one-fifth used it for reinforcement (21%), demonstrations and examples (21%), to help develop concepts (21%) and to help teach specific topics (18%).

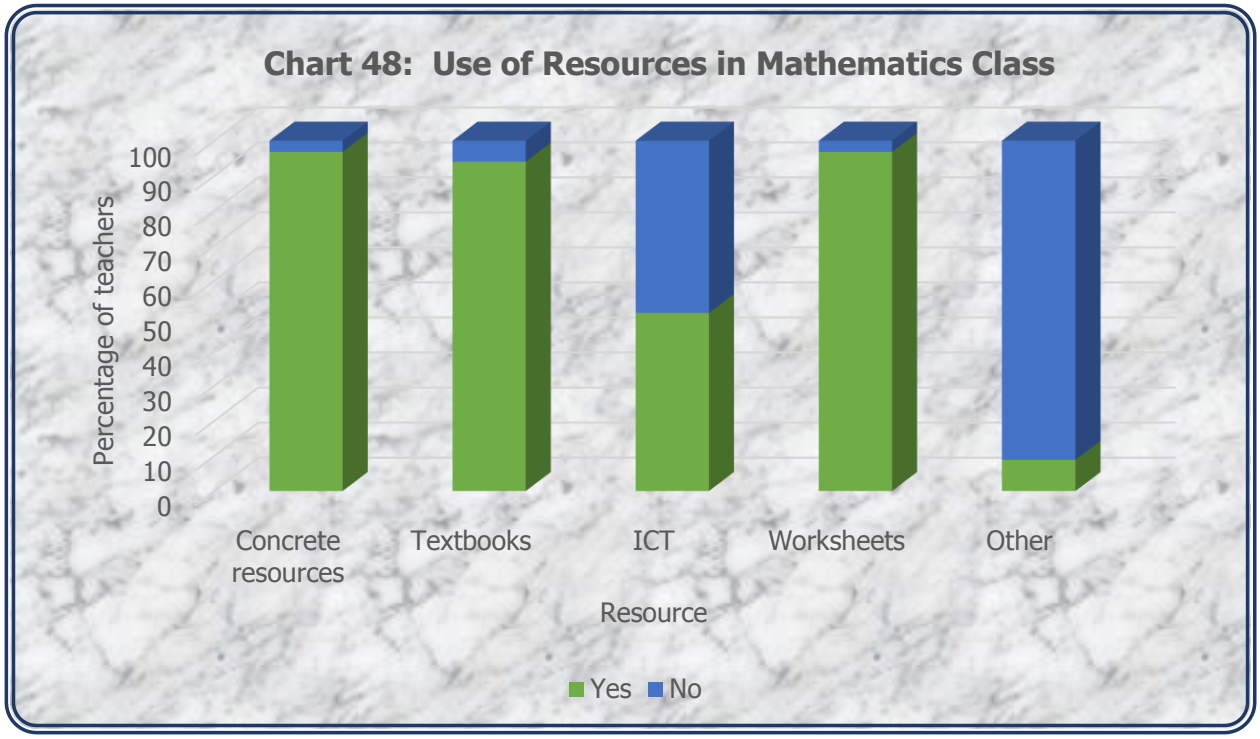


Table 52: How Resources are Used in Mathematics Class

Use	Resources - percentage of teachers			
	Concrete resources	Textbooks	Worksheets	ICT
	(1)	(2)	(3)	(4)
Total	100	100	100	100
To help teach specific topics	27	4	1	18
Reinforcement	2	39	26	21
Demonstrations and examples	10	3	0	21
To help develop the concepts	34	2	0	21
Hands-on experience	8	0	0	0
Exercises/practice/homework	9	35	25	9
For assessment/evaluation	0	2	30	0
Not stated	11	14	18	9

Table 53: Create Resources to Teach Mathematics by Educational District

Educational district	Create resources to teach Mathematics percentage of teachers			
	Total	Yes	No	Not stated
	(1)	(2)	(3)	(4)
All districts	100	79	15	6
St. George West	100	78	18	4
St. George East	100	86	8	5
Victoria	100	80	12	8
Caroni	100	75	19	6
St. Patrick	100	85	11	4
St. Andrew/St. David	100	85	5	10
Nariva/Mayaro	100	64	36	0
Tobago	100	72	22	6

Overall, the majority (79%) of teachers created resources to teach Mathematics. An examination of the data by educational district reveals that three-quarters (75%) or more of the teachers in each district created resources to teach Mathematics except in the district of Nariva/Mayaro (64%) and Tobago (72%) (Table 53). A further review of the data by type of school depicts a similar pattern of responses (Table 54).

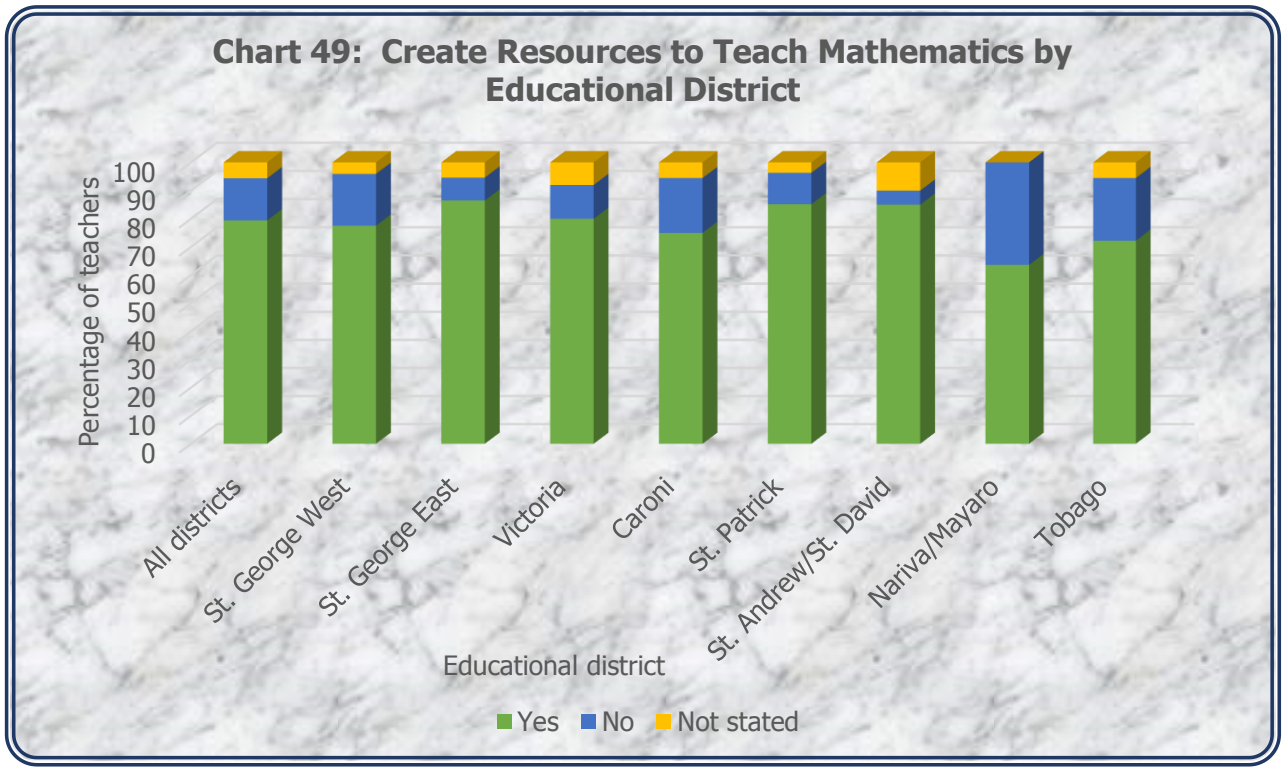


Table 54: Create Resources to Teach Mathematics by Type of School

Type of school	Created resources to teach Mathematics - percentage of teachers			
	Total	Yes	No	Not stated
	(1)	(2)	(3)	(4)
All schools	100	79	15	6
Government	100	78	18	4
Government-assisted	100	80	14	5
Private	100	77	8	15

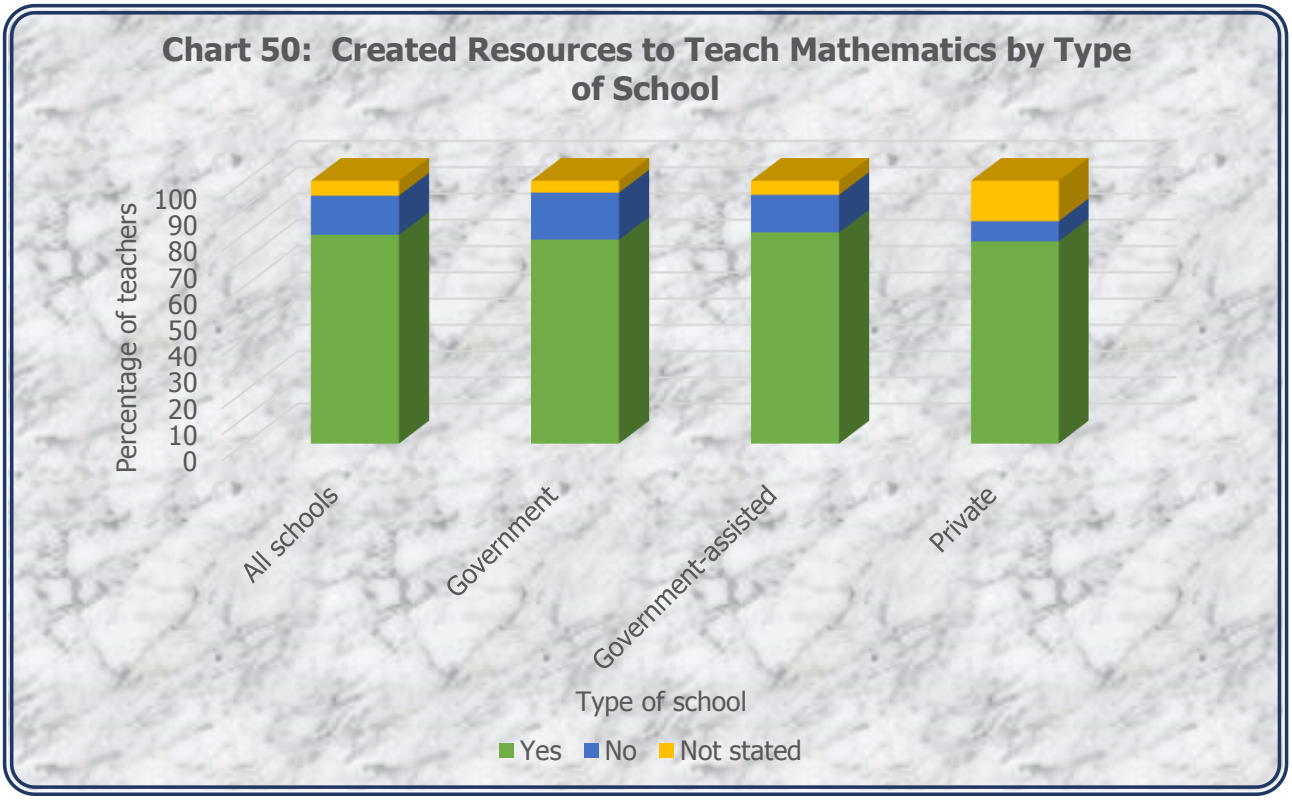


Table 55: Use Textbook to Teach Mathematics by Standard

Standard	Used textbooks to teach Mathematics - percentage of teachers		
	Total	Yes	No
	(1)	(2)	(3)
All standards	100	94	6
Standard 1	100	90	10
Standard 2	100	98	2
Standard 3	100	93	7
Standard 4	100	96	4
Standard 5	100	92	8

Overall, and by class level, the significant majority (94%) of the teachers used textbooks to teach Mathematics (Table 55). Most teachers used the textbook for exercises for students (92%), homework (91%) and to reinforce what was taught (90%) (Table 56). Thirty-one percent (31%) of the teachers used the textbook as the basis for instruction (31%) while 23% used it as a parent guide (23%).

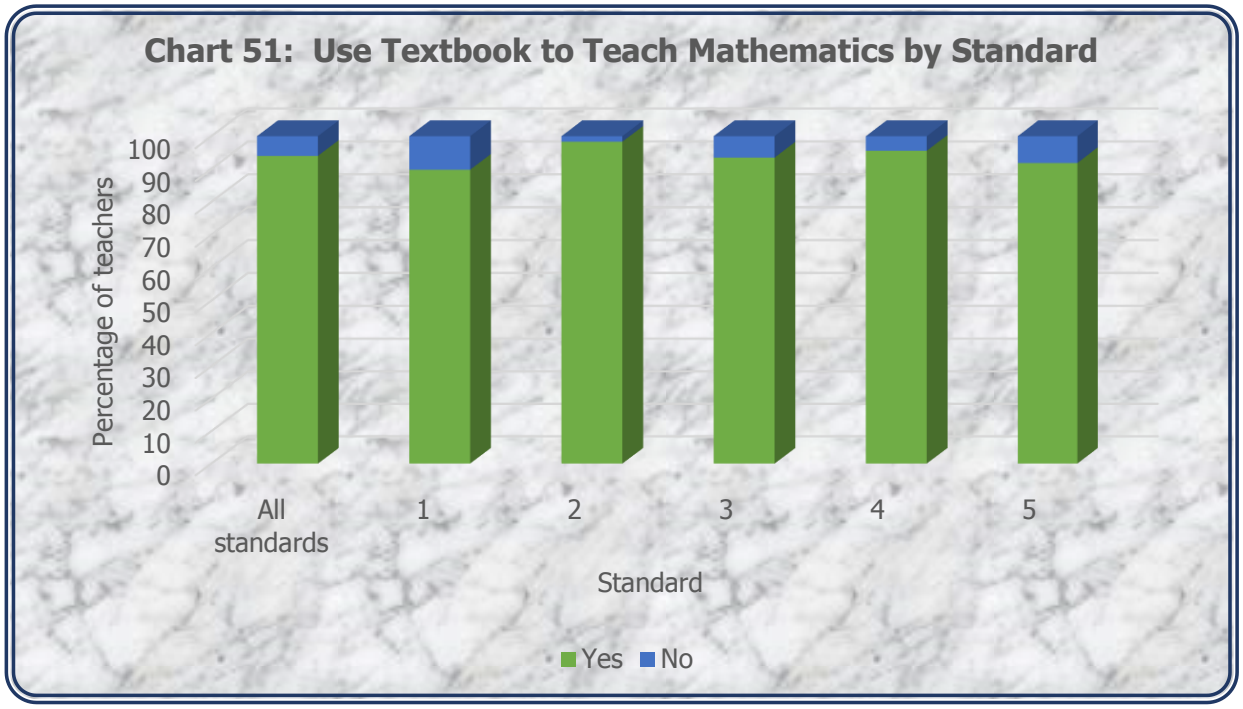


Table 56: Uses of Mathematics Textbooks

Use of textbook	Total	Yes	No
	(1)	(2)	(3)
As the basis for instruction	100	31	69
To reinforce what is taught	100	90	10
Exercises for students	100	92	8
Homework for students	100	91	9
As a parent guide	100	23	77

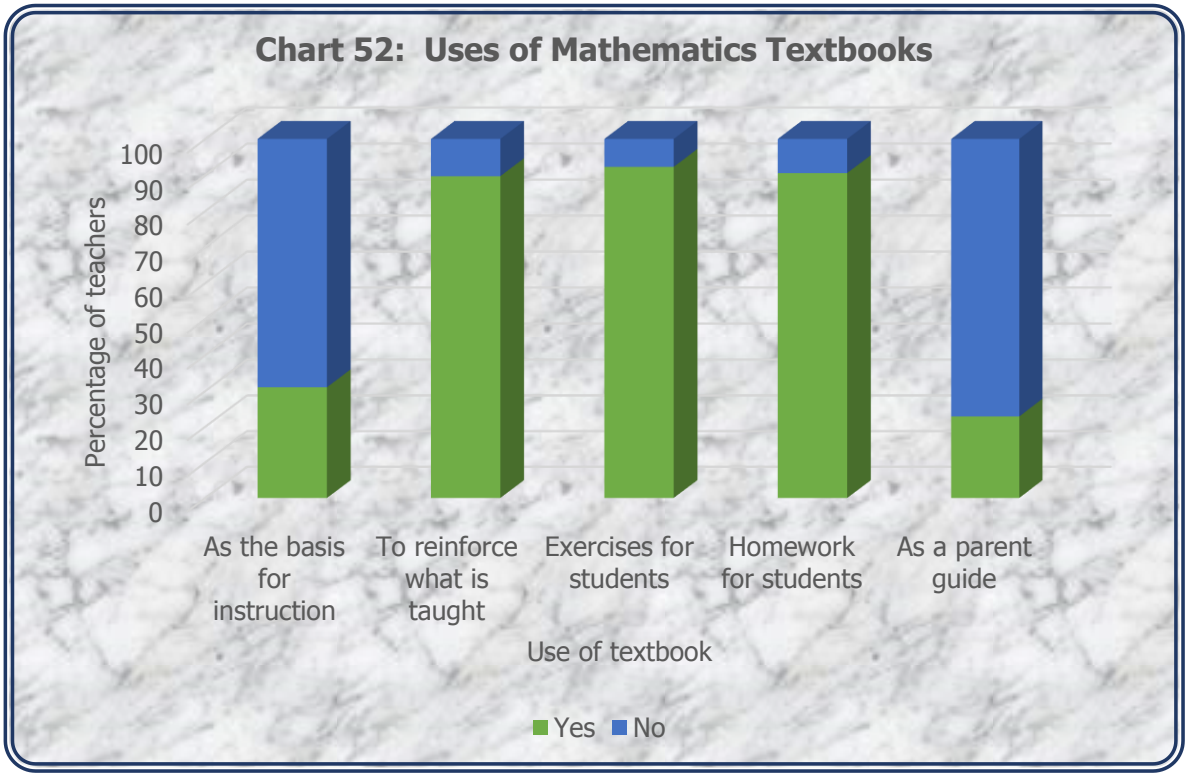


Table 57: Adequacy of Textbooks Used to Teach Mathematics

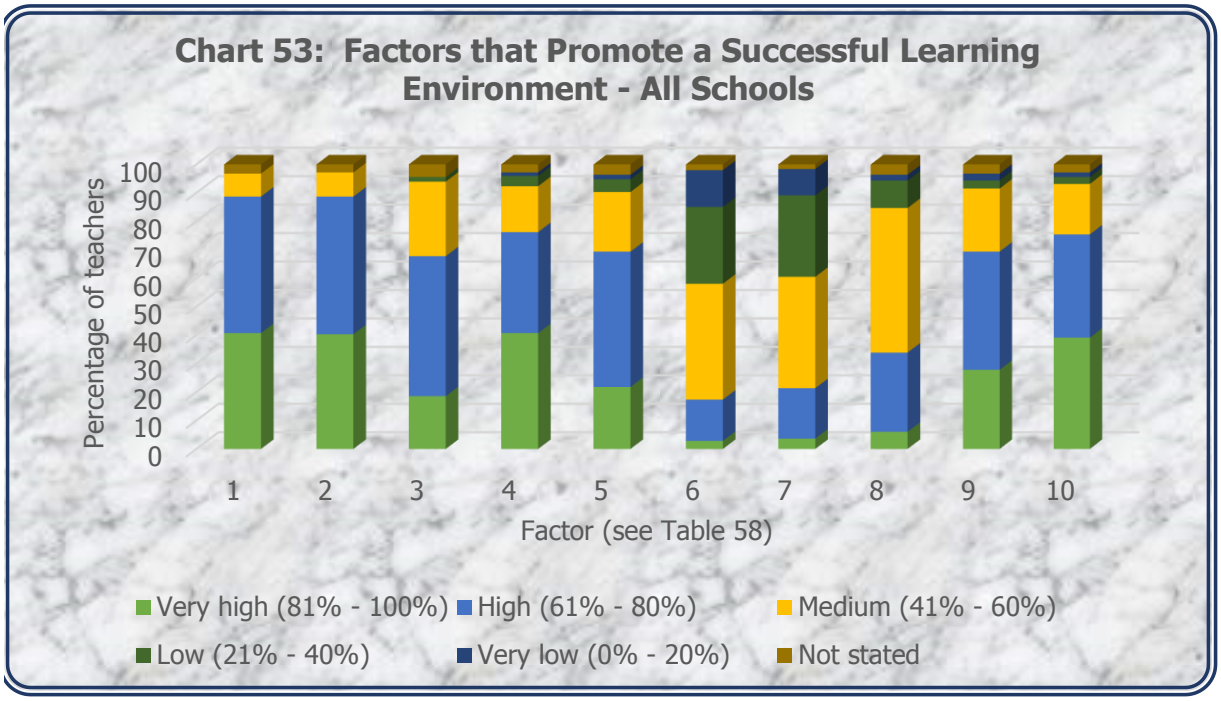
Textbook used to teach Mathematics	Adequate to teach Mathematics - percentage of teachers			
	Total	Yes	No	Not stated
	(1)	(2)	(3)	(4)
All Textbooks	100	52	39	9
Mathematics For S.E.A. Revised Edition Standards 4 & 5 by Harry Subnaik & Mitra Rajnauth	100	70	30	0
Reinforcing Mathematics for Caribbean Schools Standards 1 - 3 by Victor and Sherry-Ann Biran	100	50	46	4
Reinforcing Mathematics for Primary Schools Standards 4 & 5 by Victor and Sherry-Ann Biran	100	25	63	13
Exploring Mathematics Books 1 - 3 by Jean Fernandes	100	56	44	0
Exploring Mathematics Books 4 - 5 by Jean Fernandes	100	52	43	4
A Process of learning Mathematics Levels 1 - 3 by Vidya Maharaj	100	55	42	3
A Process of Learning Mathematics Levels 4 - 5 by Vidya Maharaj	100	25	75	0
New Comprehensive Mathematics Standard Books 1 & 2 by Wesley A Furlonge	100	58	42	0
Other	100	65	29	6

The table above presents a summary of the adequacy of the Mathematics textbooks used by the sample of primary school teachers. Overall, a half or more of the teachers stated that all textbooks used to teach Mathematics were adequate except Reinforcing Mathematics for Primary Schools Standards 4 & 5 by Victor and Sherry-Ann Biran (25%) and A Process of Learning Mathematics Levels 4 - 5 by Vidya Maharaj (25%). Mathematics For S.E.A. Revised Edition Standards 4 & 5 by Harry Subnaik & Mitra Rajnauth recorded the highest percentage (70%) of adequacy.

Table 58: Factors that Promote a Successful Learning Environment by Type of School
All Schools

Factor	Rating - percentage of teachers						
	Total	Very high (81% - 100%)	High (61% - 80%)	Medium (41% - 60%)	Low (21% - 40%)	Very low (0% - 20%)	Not stated
	(1)	(2)	(3)	(4)	(5)	(6)	(7)
1 Teachers' understanding of the Mathematics curriculum	100	41	48	8	0	0	3
2 Teachers' knowledge of the content of the Mathematics curriculum	100	40	48	8	0	0	3
3 Teachers' success in implementing the Mathematics curriculum	100	19	49	26	2	0	4
4 Teachers' commitment to work together to improve students' achievement	100	41	35	16	4	1	3
5 Teachers' ability to inspire students	100	22	48	21	4	2	4
6 Parental involvement in school activities	100	3	15	41	27	13	2
7 Parental support for students' achievement	100	4	18	39	29	9	2
8 Students' desire to do well in school	100	6	28	51	10	2	4
9 Instructional support provided to teachers by school administration	100	28	42	22	3	2	3
10 School administration's support for teachers' professional development	100	39	36	18	2	2	3

Table 58 identifies a list of factors that promoted a successful learning environment and how teachers rated them within their schools. The factors which were rated the highest (Cols 2+3) by the sample of teachers were 'teachers' understanding of the Mathematics curriculum' (89%) and 'teachers' knowledge of the content of the Mathematics curriculum' (88%). Three-quarters of the teachers assigned a high rating to 'teachers' commitment to work together to improve students' achievement' (76%) and 'school administration's support for teachers' professional development' (75%). Additionally, over two-thirds of the teachers rated 'teachers' ability to inspire students' (70%), 'instructional support provided to teachers by school administration' (70%) and 'teachers' success in implementing the Mathematics curriculum' (68%) as 'high' within their schools. Similar to the principals (Table 27), 'parental involvement in school activities' (40%) and 'parental support for students' achievement' (38%) received the lowest rating (Cols 4+5) from teachers. Approximately a half (51%) of the teachers assigned a medium rating to 'students desire to do well in school'. A review of the data by type of school reveals that teachers in private primary schools rated each of the factors within their schools higher compared to teachers in public primary schools (Tables 59 - 61).



Source: Table 58

Table 59: Factors that Promote a Successful Learning Environment by Type of School Government Schools

Factor	Rating - percentage of teachers						
	Total	Very high (81% - 100%)	High (61% - 80%)	Medium (41% - 60%)	Low (21% - 40%)	Very low (0% - 20%)	Not stated
	(1)	(2)	(3)	(4)	(5)	(6)	(7)
1 Teachers' understanding of the Mathematics curriculum	100	36	51	10	0	0	3
2 Teachers' knowledge of the content of the Mathematics curriculum	100	34	57	6	0	0	3
3 Teachers' success in implementing the Mathematics curriculum	100	18	39	34	3	0	6
4 Teachers' commitment to work together to improve students' achievement	100	34	39	19	4	0	3
5 Teachers' ability to inspire students	100	13	46	28	6	0	6
6 Parental involvement in school activities	100	0	12	37	33	16	1
7 Parental support for students' achievement	100	0	13	37	36	10	3
8 Students' desire to do well in school	100	3	28	46	16	3	3
9 Instructional support provided to teachers by school administration	100	18	45	25	6	1	4
10 School administration's support for teachers' professional development	100	18	45	25	6	1	4

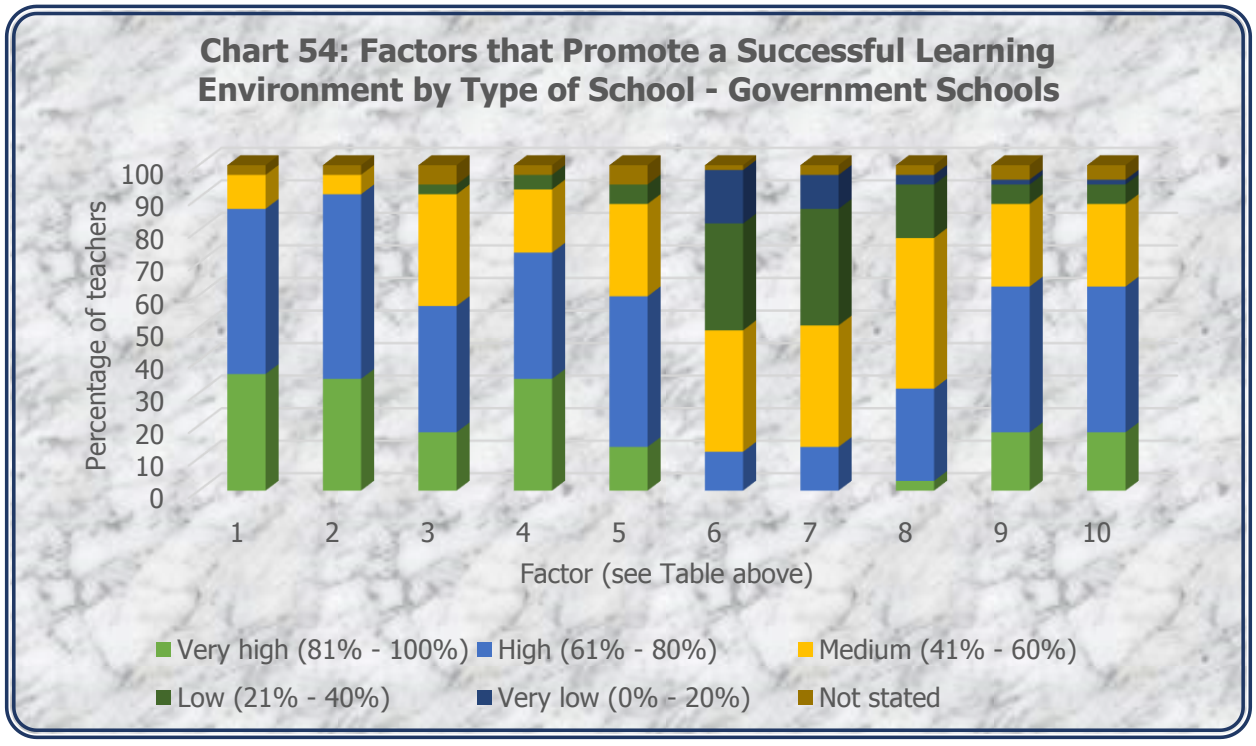


Table 60: Factors that Promote a Successful Learning Environment by Type of School
Government-assisted Schools

Factor	Rating - percentage of teachers						
	Total	Very high (81% - 100%)	High (61% - 80%)	Medium (41% - 60%)	Low (21% - 40%)	Very low (0% - 20%)	Not stated
	(1)	(2)	(3)	(4)	(5)	(6)	(7)
1 Teachers' understanding of the Mathematics curriculum	100	42	47	8	0	0	4
2 Teachers' knowledge of the content of the Mathematics curriculum	100	42	45	10	0	0	3
3 Teachers' success in implementing the Mathematics curriculum	100	19	51	24	1	0	4
4 Teachers' commitment to work together to improve students' achievement	100	42	34	15	4	2	3
5 Teachers' ability to inspire students	100	24	47	19	4	2	3
6 Parental involvement in school activities	100	4	14	40	27	13	2
7 Parental support for students' achievement	100	5	16	40	28	10	1
8 Students' desire to do well in school	100	6	26	54	8	2	4
9 Instructional support provided to teachers by school administration	100	29	42	21	2	3	3
10 School administration's support for teachers' professional development	100	37	39	17	2	2	3

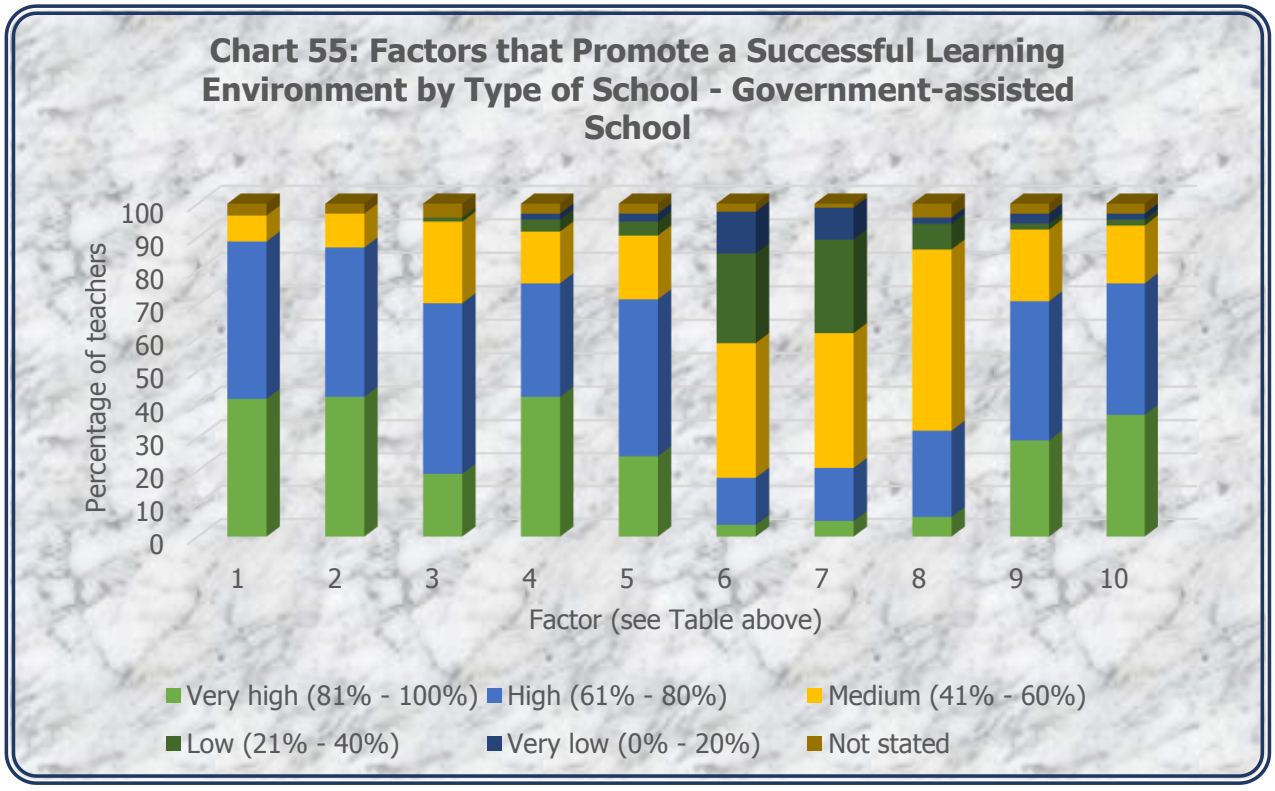


Table 61: Factors that Promote a Successful Learning Environment by Type of School
Private Schools

Factor	Rating - percentage of teachers						
	Total	Very high (81% - 100%)	High (61% - 80%)	Medium (41% - 60%)	Low (21% - 40%)	Very low (0% - 20%)	Not stated
	(1)	(2)	(3)	(4)	(5)	(6)	(7)
1 Teachers' understanding of the Mathematics curriculum	100	54	46	0	0	0	0
2 Teachers' knowledge of the content of the Mathematics curriculum	100	46	54	0	0	0	0
3 Teachers' success in implementing the Mathematics curriculum	100	15	77	8	0	0	0
4 Teachers' commitment to work together to improve students' achievement	100	54	38	8	0	0	0
5 Teachers' ability to inspire students	100	31	62	8	0	0	0
6 Parental involvement in school activities	100	8	31	62	0	0	0
7 Parental support for students' achievement	100	8	62	31	0	0	0
8 Students' desire to do well in school	100	23	46	31	0	0	0
9 Instructional support provided to teachers by school administration	100	62	23	15	0	0	0
10 School administration's support for teachers' professional development	100	85	8	8	0	0	0

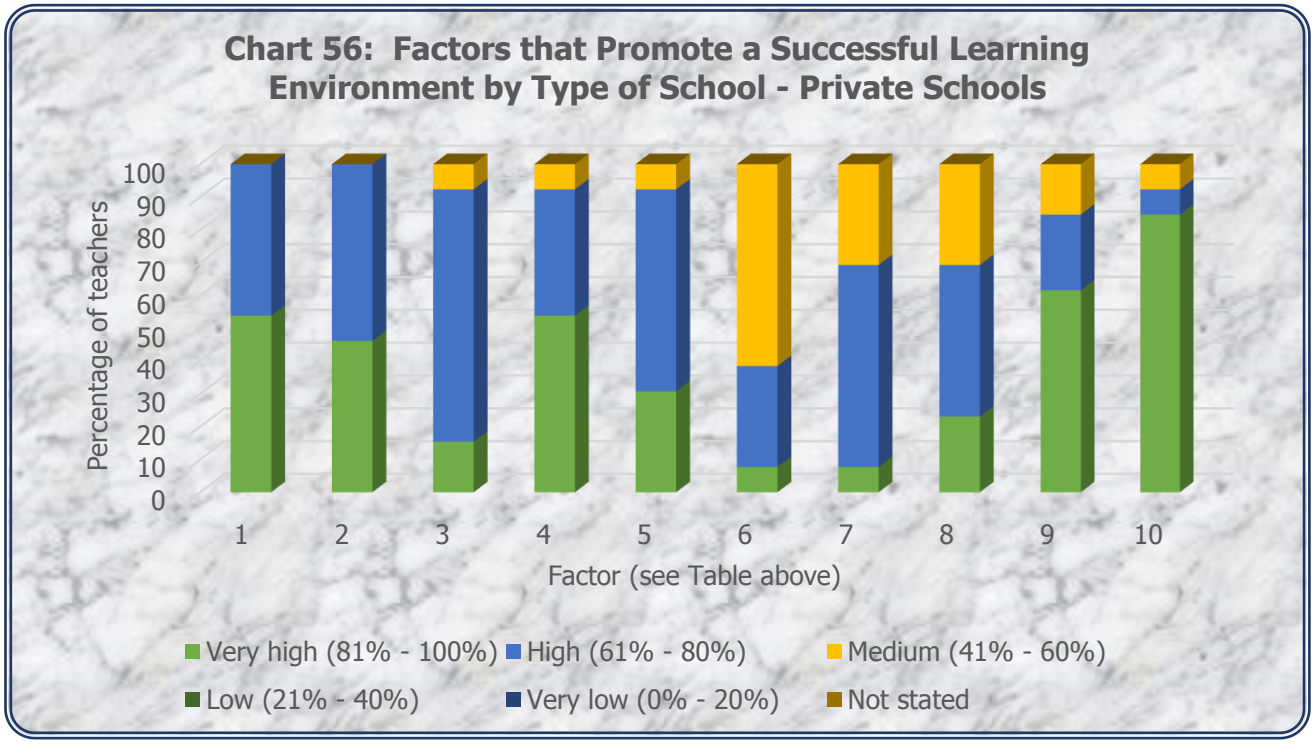


Table 62: Frequency of Assessment of Students in Mathematics by Type of School

Type of school	Frequency of assessment - percentage of teachers					
	Total	End of each topic	Weekly	Monthly	End of term	Not stated
	(1)	(2)	(3)	(4)	(5)	(6)
All schools	100	46	43	11	0	1
Government	100	46	48	4	0	1
Government-assisted	100	46	39	14	0	1
Private	100	31	62	8	0	0

Overall, a substantial percentage (46%) of the teachers indicated that students were assessed in Mathematics at the end of each topic while 43% of the teachers administered weekly assessments and 11% reported monthly assessments.

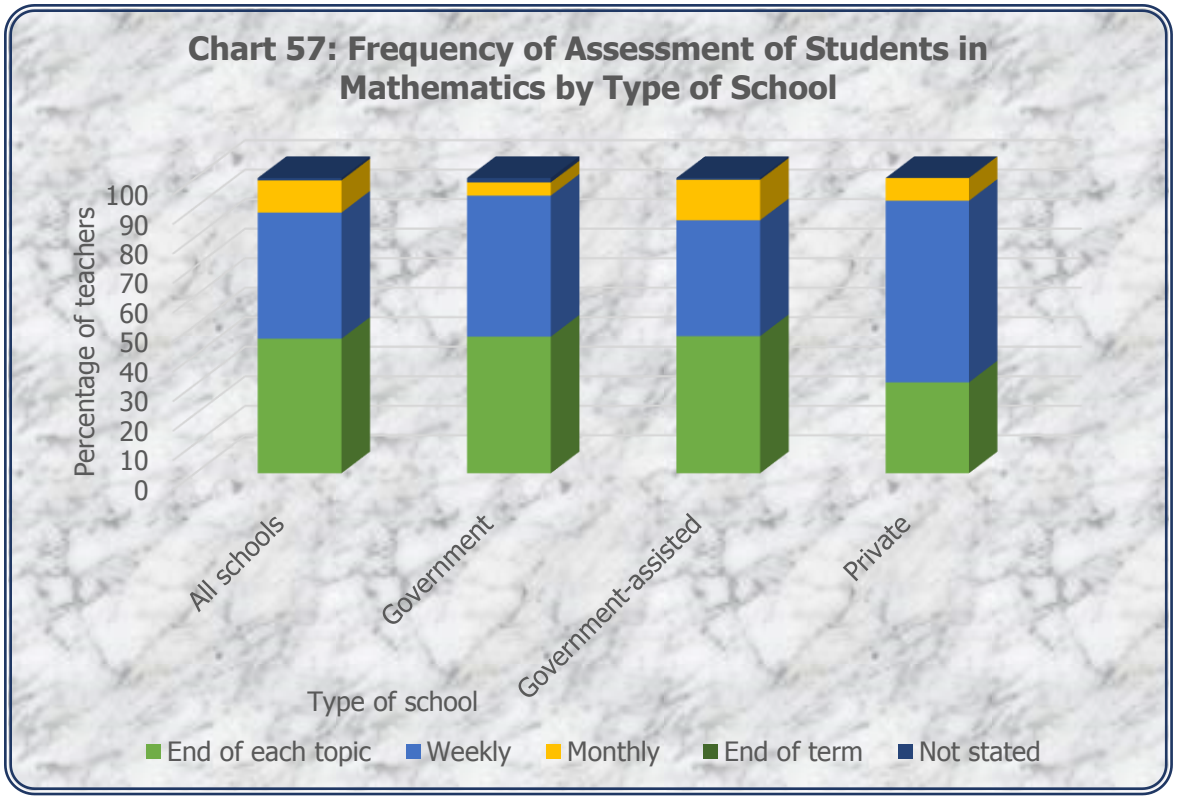


Table 63: Standardisation of Mathematics Assessments Across Grade Levels by Type of School

Type of school	Assessments were standardised - percentage				
	Total	Yes	No	Not stated	Not applicable
	(1)	(2)	(3)	(4)	(5)
All schools	100	38	46	7	10
Government	100	28	48	7	16
Government-assisted	100	40	46	7	8
Private	100	62	31	8	0

Thirty-eight percent (38%) of the teachers, especially in private schools (62%), reported that Mathematics assessments were standardised across the grade levels (eg. all standard 1s taking the same test) while 46% stated that the assessments were not standardised. Ten percent (10%) of the sample indicated that there was only one class at that grade level in their schools.

Chart 58: Standardisation of Mathematics Assessments Across Grade Levels by Type of School

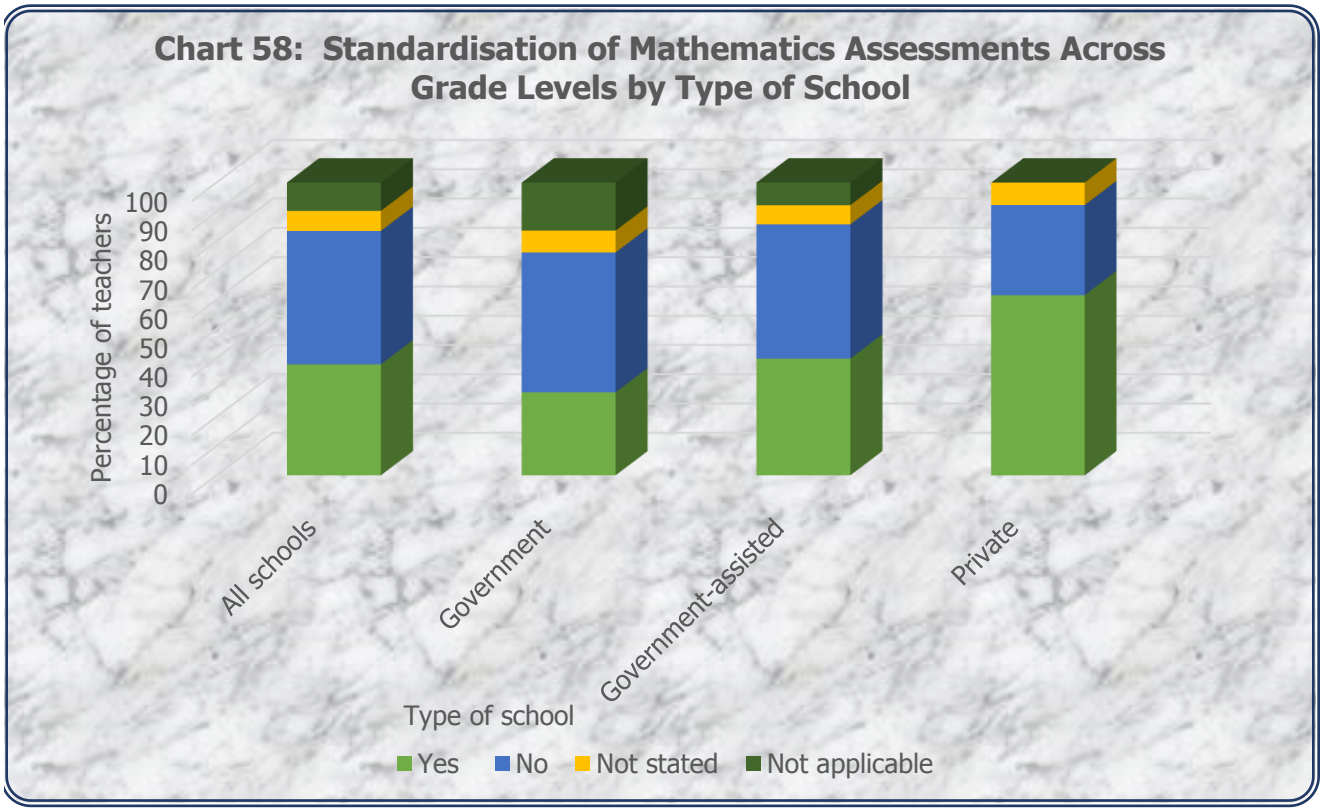


Table 64: Types of Assessment

Type of assessment	Used - percentage of teachers			
	Total	Yes	No	Not stated
	(1)	(2)	(3)	(4)
1 Homework assignments	100	86	14	0
2 Class participation	100	97	3	0
3 Teacher-made tests	100	99	1	0
4 Standardised tests	100	84	13	3
5 Projects	100	75	22	4
6 Group work	100	77	23	1
7 Other	100	14	82	4

The table above reveals that almost all of the teachers assessed their students in Mathematics through teacher-made tests (99%) and class participation (97%). Additionally, three-quarters or more of the teachers used homework assignments (86%), standardised tests (84%), group work (77%) and projects (75%) to assess their students in Mathematics.

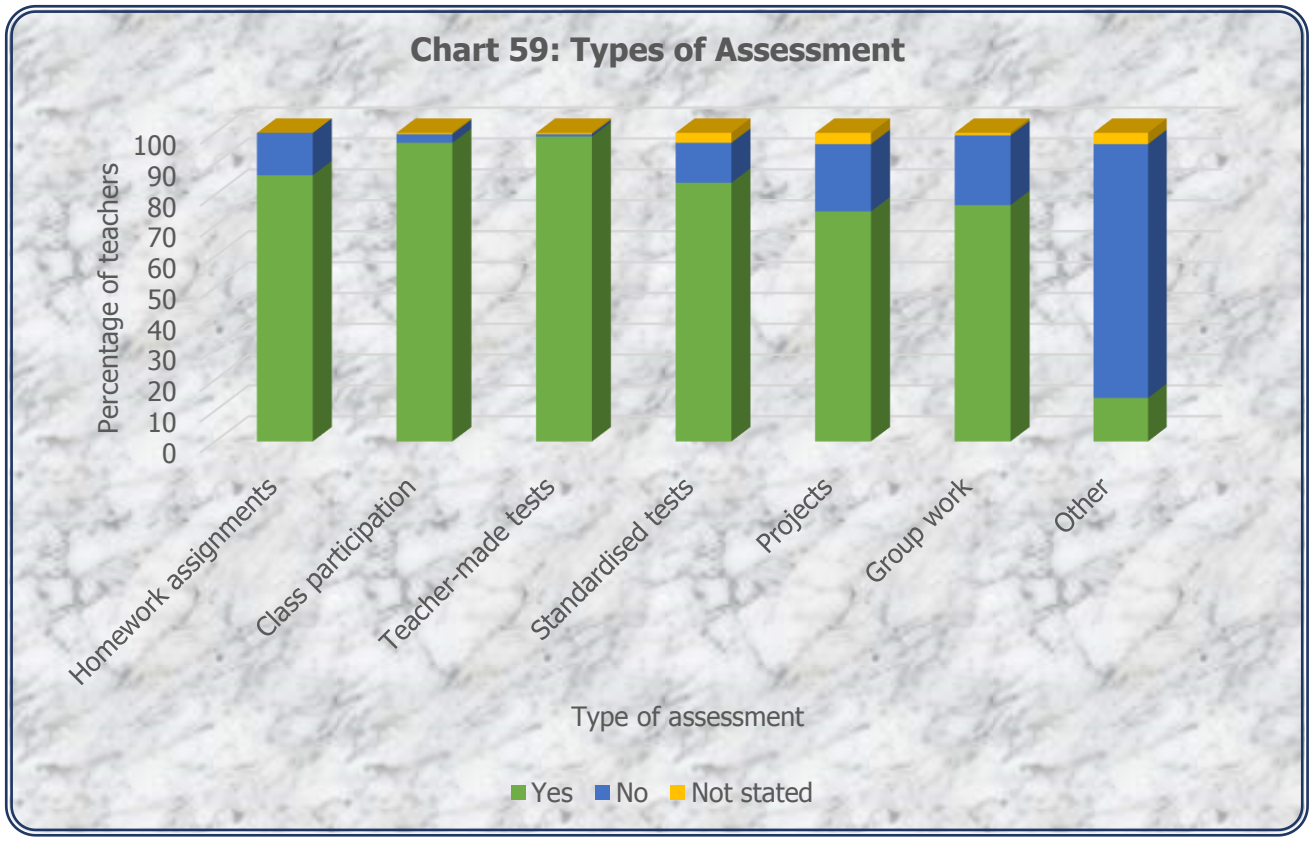


Table 65: Use Data from Students' Assessments to Plan Lessons by Type of School

Type of school	Use data from students' assessments to plan lessons percentage of teachers			
	Total	Yes	No	Not stated
	(1)	(2)	(3)	(4)
All schools	100	93	3	4
Government	100	94	2	4
Government-assisted	100	92	4	4
Private	100	100	0	0

Overall, and by type of school, a significant majority (93%) of the teachers used the data obtained from students' assessments to plan their Mathematics lessons.

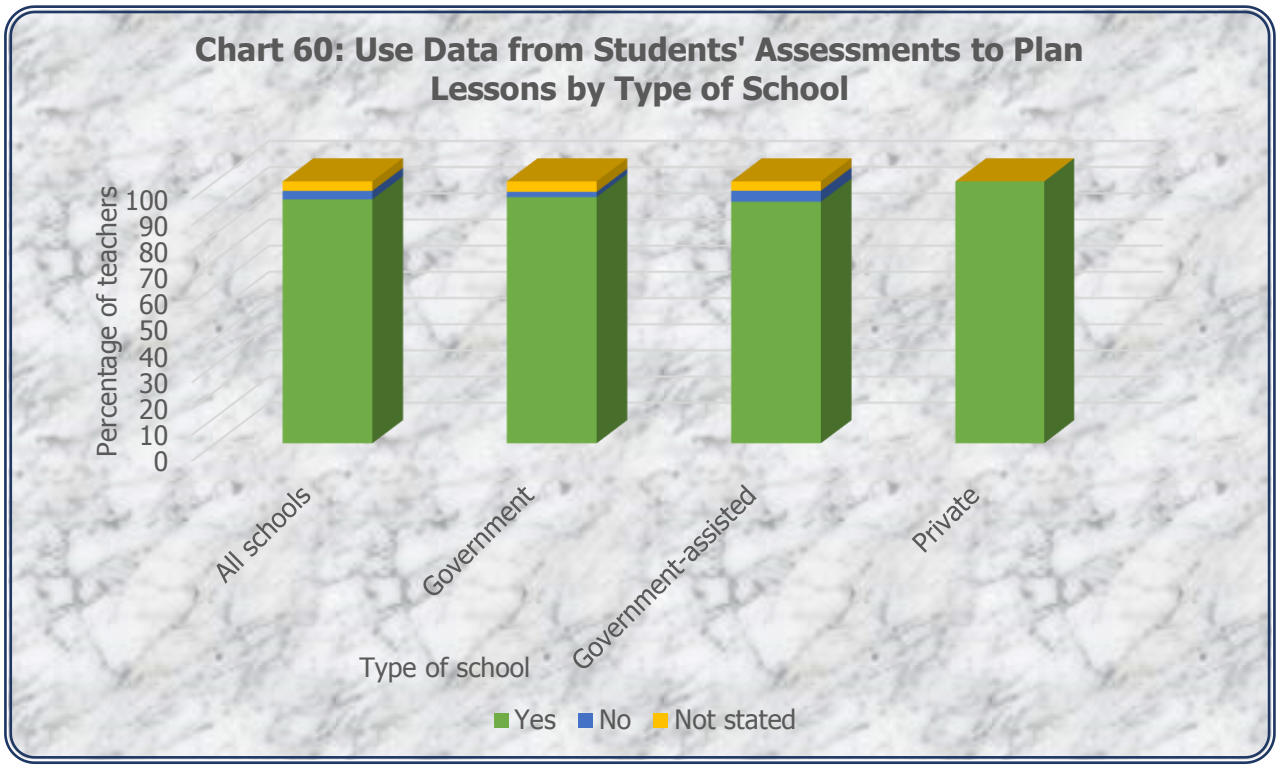


Table 66: Issues that Limit Teaching Mathematics - All Schools

	Issue	Limited teaching - percentage of teachers				
		Total	A lot	Some	Not at all	Not stated
		(1)	(2)	(3)	(4)	(5)
1	Students lack the prerequisite knowledge or skills	100	25	63	10	2
2	Students indiscipline	100	37	46	16	1
3	Students disengagement	100	22	63	13	2
4	Students with physical/mental/psychological disabilities	100	16	51	30	3
5	Student absenteeism	100	32	52	15	1
6	Parents not interested in their children's learning and progress	100	32	54	13	1
7	Shortage of instructional materials and supplies	100	11	44	45	1
8	Inadequate technological resources	100	13	44	40	2
9	Inadequate physical facilities	100	12	44	42	2
10	High student/teacher ratio	100	17	30	51	2
11	Lack of time to prepare for class	100	11	35	52	2
12	Threat(s) to personal safety or the safety of students	100	8	16	73	3

Table 66 shows the sample of teachers who participated in the survey responses to issues that limited their teaching of Mathematics. Thirty-seven percent (37%) of the teachers indicated that students indiscipline limited how they taught Mathematics 'a lot' and approximately one-third of the teachers assigned a similar rating to students absenteeism (32%) and parents not interested in their children's learning and progress (32%). The survey results revealed that the majority of teachers reported that threat(s) to personal safety or the safety of students (73%), lack of time to prepare for class (52%) and high student/teacher ratio (51%) had no effect on how they taught the subject (Table 66). A review of the data by type of school shows that, in both public and private primary schools, the issue that limited how teachers taught Mathematics the most was students indiscipline (Table 67).

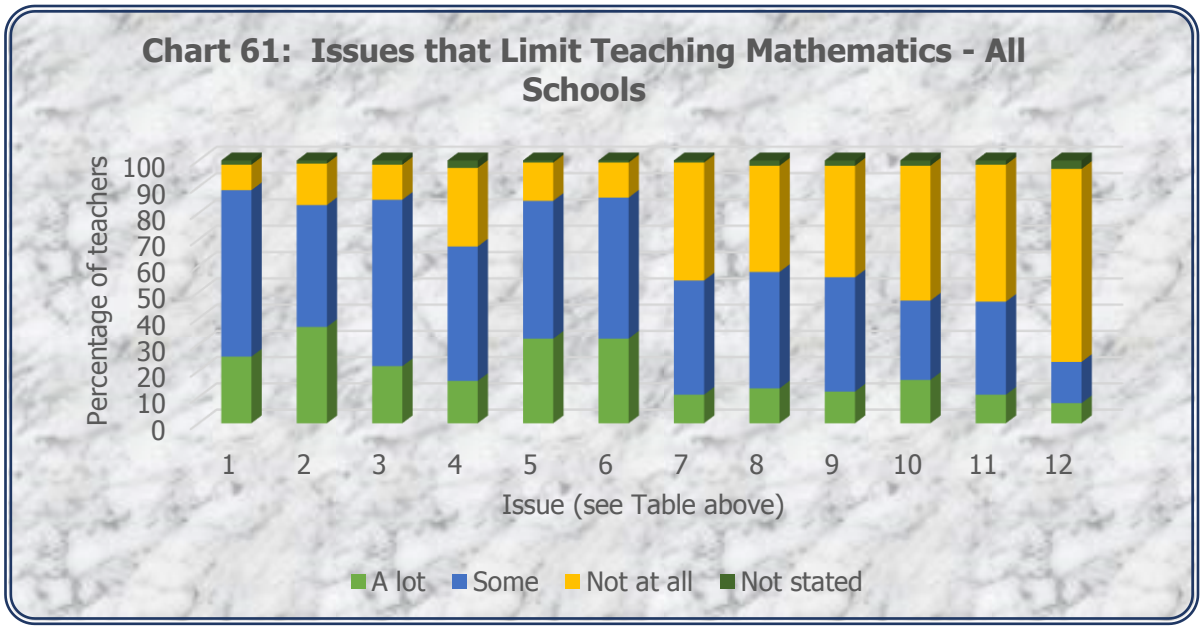


Table 67: Issues that Limit Teaching of Mathematics by Type of School

Type of school	Issue	Limited teaching - percentage of teachers				
		Total	A lot	Some	Not at all	Not stated
		(1)	(2)	(3)	(4)	(5)
Government	1 Students lack the prerequisite knowledge or skills	100	31	57	10	1
	2 Students indiscipline	100	39	43	18	0
	3 Students disengagement	100	27	63	10	0
	4 Students with physical/mental/psychological disabilities	100	19	48	30	3
	5 Student absenteeism	100	31	57	12	0
	6 Parents not interested in their children's learning and progress	100	36	48	16	0
	7 Shortage of instructional materials and supplies	100	18	33	49	0
	8 Inadequate technological resources	100	18	34	45	3
	9 Inadequate physical facilities	100	9	39	51	1
	10 High student/teacher ratio	100	16	28	54	1
	11 Lack of time to prepare for class	100	7	40	51	1
	12 Threat(s) to personal safety or the safety of students	100	3	16	75	6
Government-assisted	1 Students lack the prerequisite knowledge or skills	100	23	66	10	2
	2 Students indiscipline	100	36	46	15	2
	3 Students disengagement	100	19	64	14	2
	4 Students with physical/mental/psychological disabilities	100	14	52	31	2
	5 Student absenteeism	100	33	49	17	1
	6 Parents not interested in their children's learning and progress	100	32	55	13	1
	7 Shortage of instructional materials and supplies	100	8	48	43	1
	8 Inadequate technological resources	100	11	49	39	1
	9 Inadequate physical facilities	100	13	46	39	2
	10 High student/teacher ratio	100	16	32	49	2
	11 Lack of time to prepare for class	100	13	35	51	2
	12 Threat(s) to personal safety or the safety of students	100	10	16	72	2
Private	1 Students lack the prerequisite knowledge or skills	100	31	62	8	0
	2 Students indiscipline	100	38	54	8	0
	3 Students disengagement	100	31	54	15	0
	4 Students with physical/mental/psychological disabilities	100	23	54	15	8
	5 Student absenteeism	100	31	69	0	0
	6 Parents not interested in their children's learning and progress	100	15	69	8	8
	7 Shortage of instructional materials and supplies	100	8	46	46	0
	8 Inadequate technological resources	100	15	38	38	8
	9 Inadequate physical facilities	100	15	38	46	0
	10 High student/teacher ratio	100	23	15	62	0
	11 Lack of time to prepare for class	100	8	23	69	0
	12 Threat(s) to personal safety or the safety of students	100	8	8	85	0

Table 68: Agreement on Statements about Primary Level Mathematics Education

Statement	Agreement - percentage of teachers					
	Total	Strongly agree	Agree	Disagree	Strongly disagree	Not stated
	(1)	(2)	(3)	(4)	(5)	(6)
1 Most primary school teachers generally have adequate content and pedagogical knowledge for the teaching of Mathematics.	100	18	73	8	0	2
2 Primary schools should be structured more like secondary schools – utilising subject specific teachers.	100	41	34	19	4	1
3 Students need to learn to read and/or write before Mathematics can be successfully taught.	100	31	30	27	10	1

A significant majority (91%) of the teachers who participated in the survey agreed with the statement 'Most primary school teachers generally have adequate content and pedagogical knowledge for the teaching of Mathematics'. Three-quarters (75%) of the teachers agreed that primary schools should be structured more like secondary schools - utilising subject specific teachers while 61% agreed that students needed to learn to read and/or write before Mathematics can be successfully taught.

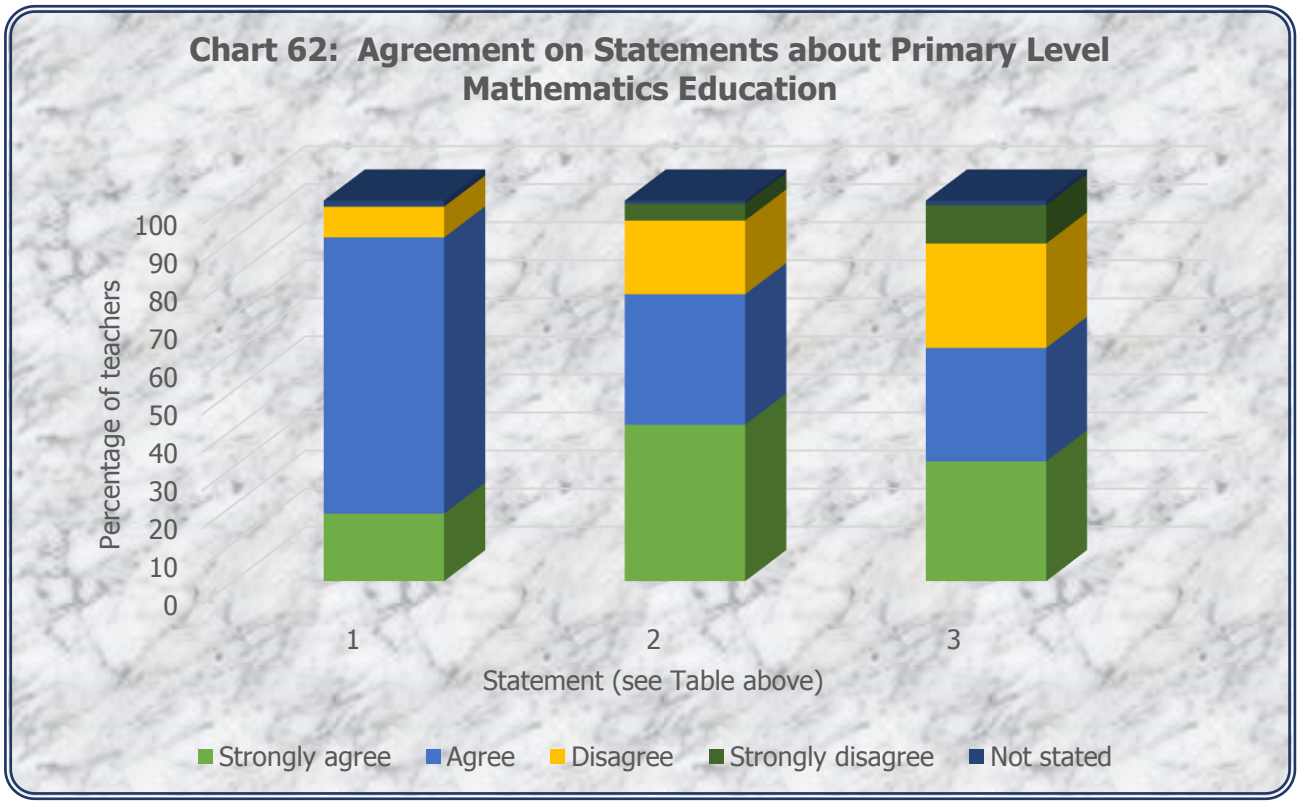


Table 69: Level of Competence in Strategies Used to Teach Mathematics by Type of School
All Schools

Strategy	Level of competence - percentage of teachers						
	Total	Very high (81% - 100%)	High (61% - 80%)	Medium (41% - 60%)	Low (21% - 40%)	Very low (0% - 20%)	Not stated
	(1)	(2)	(3)	(4)	(5)	(6)	(7)
1 Inspiring students to learn Mathematics	100	39	47	12	0	0	2
2 Showing students a variety of problem solving strategies	100	42	43	13	0	0	2
3 Adapting my teaching to engage students' interest	100	41	49	9	0	0	1
4 Helping students appreciate the value of learning Mathematics	100	40	48	11	0	0	1
5 Assessing student understanding of Mathematics	100	33	58	7	0	0	1
6 Improving the understanding of struggling students	100	25	52	21	0	1	1
7 Making Mathematics relevant to students	100	38	50	11	0	0	1
8 Helping students develop critical thinking skills	100	26	56	14	0	0	3
9 Recognizing and addressing Mathematics anxiety in students	100	20	49	28	2	0	1
10 Using problems that are culturally relevant and engaging to students	100	35	48	15	0	0	1
11 Integrating Mathematics with other subject areas	100	34	47	16	2	0	1

Tables 69 and 72 depict teachers' level of competence in utilising various strategies to teach Mathematics by type of school. Overall, and by type of school, the majority of teachers reported a high level of competence (Cols 2+3) in utilising each of the strategies listed above.

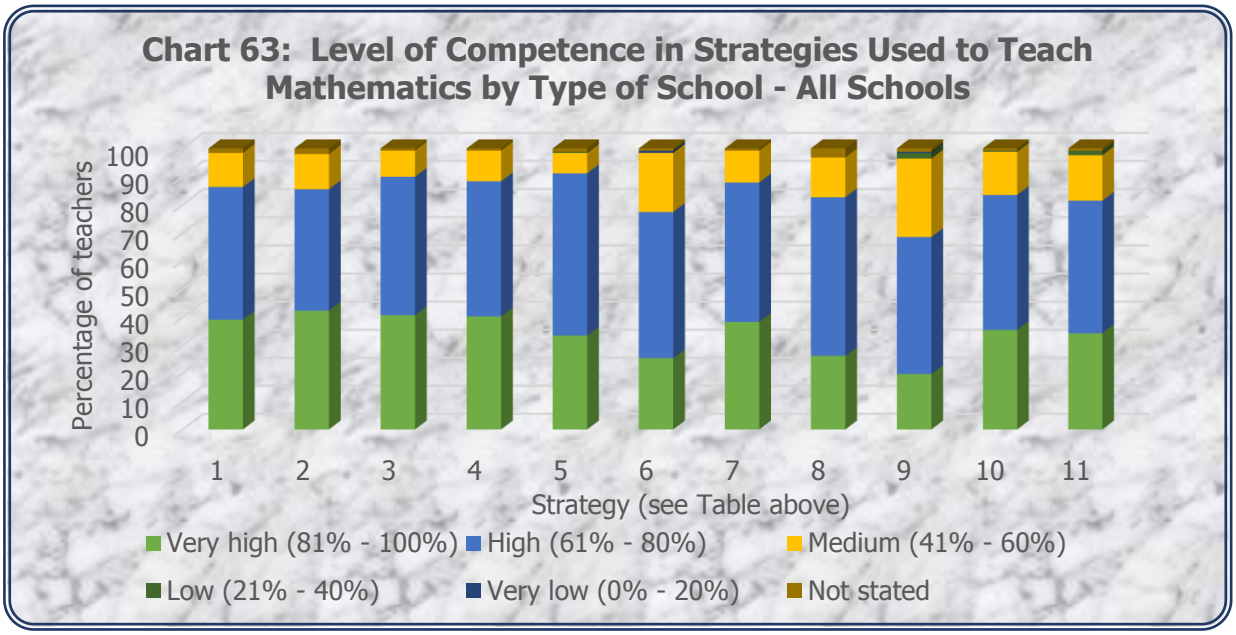


Table 70: Level of Competence in Strategies Used to Teach Mathematics by Type of School Government Schools

	Strategy	Total	Very high (81% - 100%)	High (61% - 80%)	Medium (41% - 60%)	Low (21% - 40%)	Very low (0% - 20%)	Not stated
		(1)	(2)	(3)	(4)	(5)	(6)	(7)
1	Inspiring students to learn Mathematics	100	39	48	10	0	0	3
2	Showing students a variety of problem solving strategies	100	48	43	9	0	0	0
3	Adapting my teaching to engage students' interest	100	42	51	7	0	0	0
4	Helping students appreciate the value of learning Mathematics	100	43	49	7	0	0	0
5	Assessing student understanding of Mathematics	100	30	63	4	1	0	1
6	Improving the understanding of struggling students	100	25	52	22	0	0	0
7	Making Mathematics relevant to students	100	39	54	7	0	0	0
8	Helping students develop critical thinking skills	100	25	60	10	0	0	4
9	Recognizing and addressing Mathematics anxiety in students	100	21	49	25	3	1	0
10	Using problems that are culturally relevant and engaging to students	100	36	57	7	0	0	0
11	Integrating Mathematics with other subject areas	100	34	48	15	3	0	0

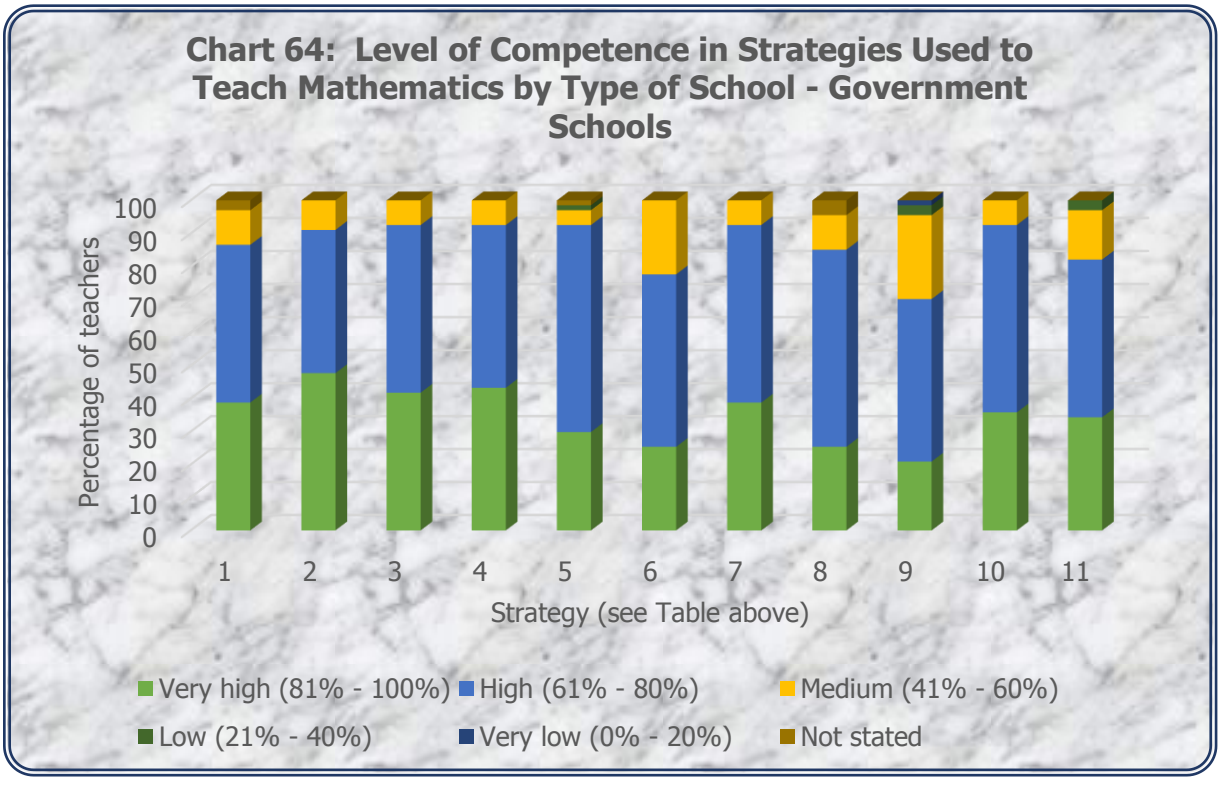


Table 71: Level of Competence in Strategies Used to Teach Mathematics by Type of School Government-assisted Schools

	Strategy	Total	Very high (81% - 100%)	High (61% - 80%)	Medium (41% - 60%)	Low (21% - 40%)	Very low (0% - 20%)	Not stated
		(1)	(2)	(3)	(4)	(5)	(6)	(7)
1	Inspiring students to learn Mathematics	100	40	45	14	0	0	1
2	Showing students a variety of problem solving strategies	100	40	42	15	0	0	3
3	Adapting my teaching to engage students' interest	100	40	48	10	0	0	1
4	Helping students appreciate the value of learning Mathematics	100	40	46	13	0	0	1
5	Assessing student understanding of Mathematics	100	35	55	9	0	0	1
6	Improving the understanding of struggling students	100	25	51	21	1	0	1
7	Making Mathematics relevant to students	100	39	47	13	0	0	1
8	Helping students develop critical thinking skills	100	26	55	15	0	0	3
9	Recognizing and addressing Mathematics anxiety in students	100	20	48	29	2	0	2
10	Using problems that are culturally relevant and engaging to students	100	36	43	19	1	0	1
11	Integrating Mathematics with other subject areas	100	36	45	17	1	0	1

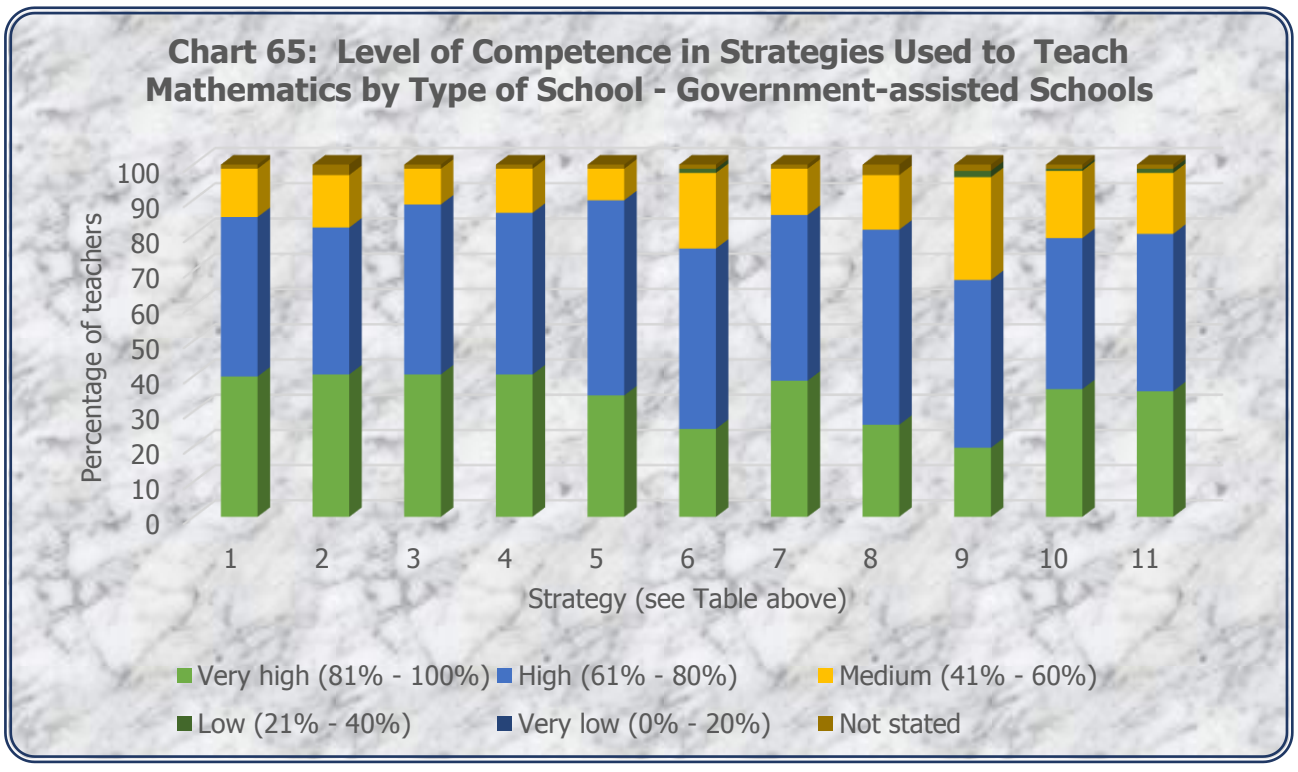


Table 72: Level of Competence in Strategies Used to Teach Mathematics by Type of School Private Schools

	Strategy	Total	Very high (81% - 100%)	High (61% - 80%)	Medium (41% - 60%)	Low (21% - 40%)	Very low (0% - 20%)	Not stated
		(1)	(2)	(3)	(4)	(5)	(6)	(7)
1	Inspiring students to learn Mathematics	100	31	69	0	0	0	0
2	Showing students a variety of problem solving strategies	100	38	62	0	0	0	0
3	Adapting my teaching to engage students' interest	100	38	54	8	0	0	0
4	Helping students appreciate the value of learning Mathematics	100	23	69	8	0	0	0
5	Assessing student understanding of Mathematics	100	38	62	0	0	0	0
6	Improving the understanding of struggling students	100	31	62	8	0	0	0
7	Making Mathematics relevant to students	100	31	62	8	0	0	0
8	Helping students develop critical thinking skills	100	31	54	15	0	0	0
9	Recognizing and addressing Mathematics anxiety in students	100	15	62	23	0	0	0
10	Using problems that are culturally relevant and engaging to students	100	23	69	8	0	0	0
11	Integrating Mathematics with other subject areas	100	15	77	8	0	0	0

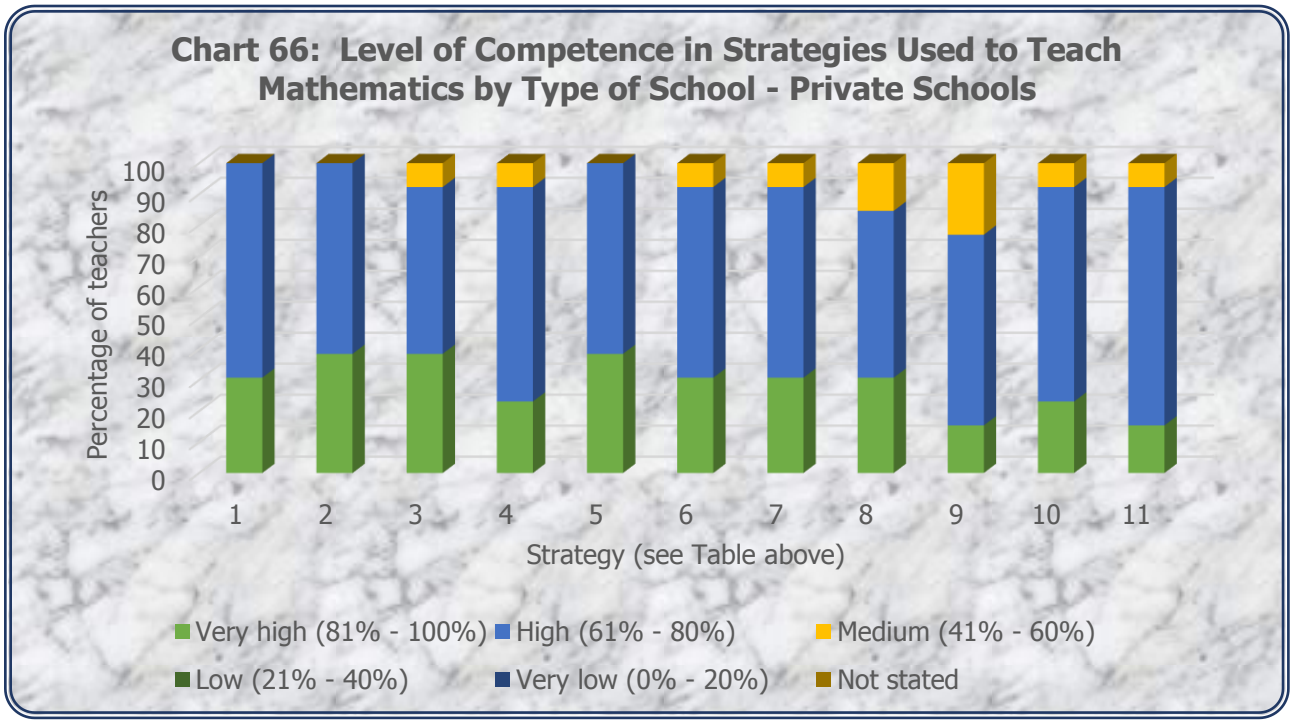
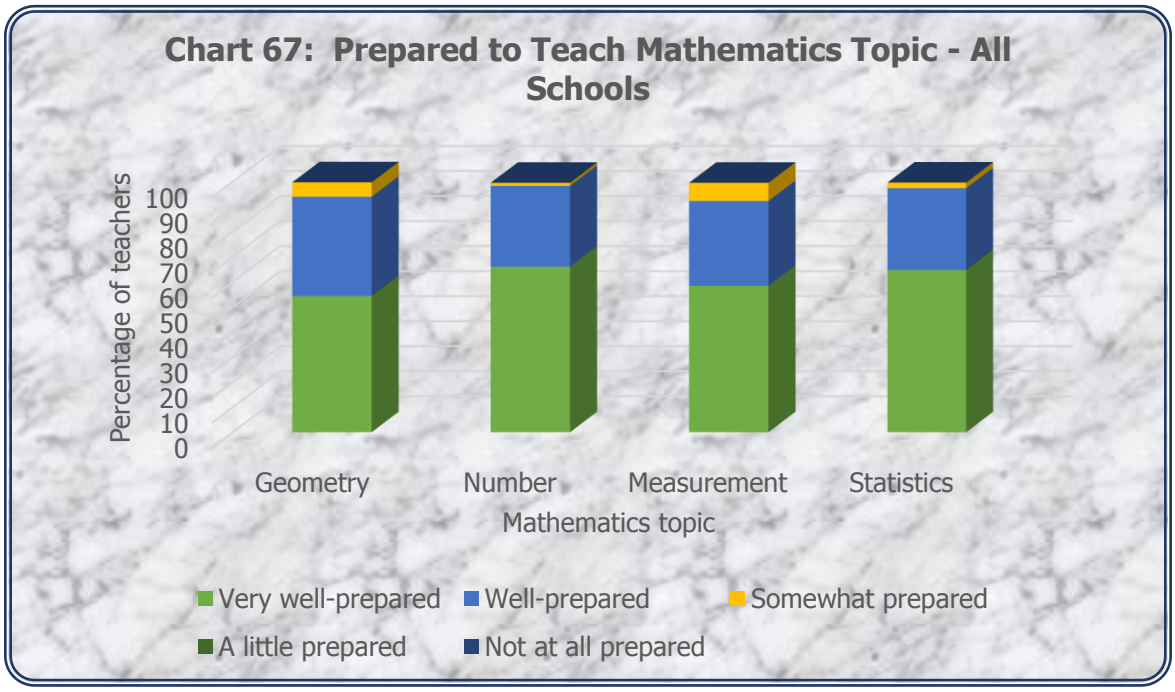


Table 73: Prepared to Teach Mathematics Topics by Educational District

Educational district	Mathematics topic	Preparedness - percentage of teachers					
		Total	Very well-prepared	Well-prepared	Somewhat prepared	A little prepared	Not at all prepared
		(1)	(2)	(3)	(4)	(5)	(6)
All districts	Geometry	100	54	40	6	0	0
	Number	100	66	32	1	0	0
	Measurement	100	58	34	7	0	0
	Statistics	100	65	33	2	0	0
St. George West	Geometry	100	49	47	4	0	0
	Number	100	63	35	2	0	0
	Measurement	100	51	45	4	0	0
	Statistics	100	57	39	2	0	0
St. George East	Geometry	100	58	39	3	0	0
	Number	100	65	35	0	0	0
	Measurement	100	49	41	11	0	0
	Statistics	100	66	31	3	0	0
Victoria	Geometry	100	46	46	8	0	0
	Number	100	66	34	0	0	0
	Measurement	100	60	34	6	0	0
	Statistics	100	64	34	2	0	0
Caroni	Geometry	100	64	33	3	0	0
	Number	100	75	25	0	0	0
	Measurement	100	67	28	6	0	0
	Statistics	100	69	28	3	0	0
St. Patrick	Geometry	100	67	30	4	0	0
	Number	100	70	22	7	0	0
	Measurement	100	70	26	4	0	0
	Statistics	100	70	26	4	0	0
St. Andrew/ St. David	Geometry	100	60	35	5	0	0
	Number	100	70	30	0	0	0
	Measurement	100	65	20	15	0	0
	Statistics	100	70	30	0	0	0
Nariva/ Mayaro	Geometry	100	36	64	0	0	0
	Number	100	36	64	0	0	0
	Measurement	100	45	55	0	0	0
	Statistics	100	45	55	0	0	0
Tobago	Geometry	100	54	23	23	0	0
	Number	100	70	30	0	0	0
	Measurement	100	64	18	18	0	0
	Statistics	100	72	28	0	0	0

Overall, over 90% of the teachers indicated that they were well-prepared (Cols 2+3) to teach the four (4) Mathematics topics listed above, with as much as over a half stating that they were very well-prepared to teach Number (66%), Statistics (65%), Measurement (58%) and Geometry (54%). By educational district, all of the teachers (100%) in the Nariva/Mayaro district reported that they were very well-prepared or well-prepared to teach the four (4) Mathematics topics (Table 73). The survey results were comparable by type of school (Table 74).



Source: Table 73

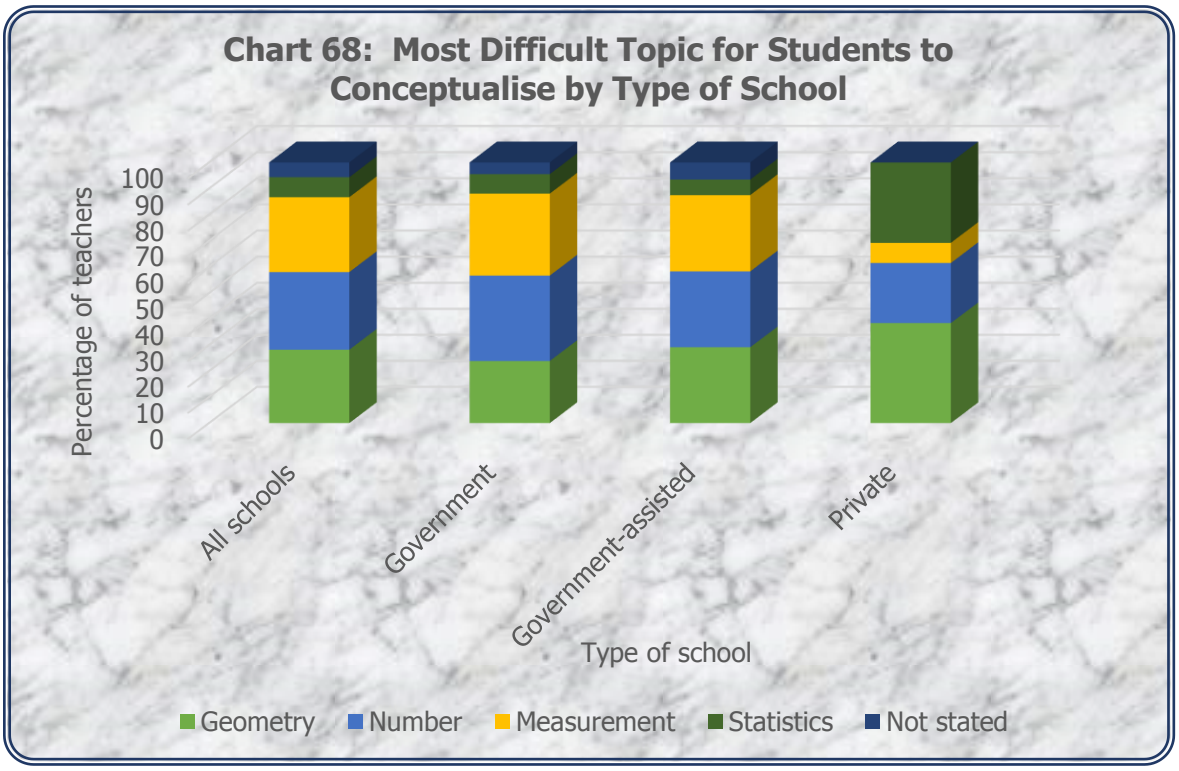
Table 74: Prepared to Teach Mathematics Topics by Type of School

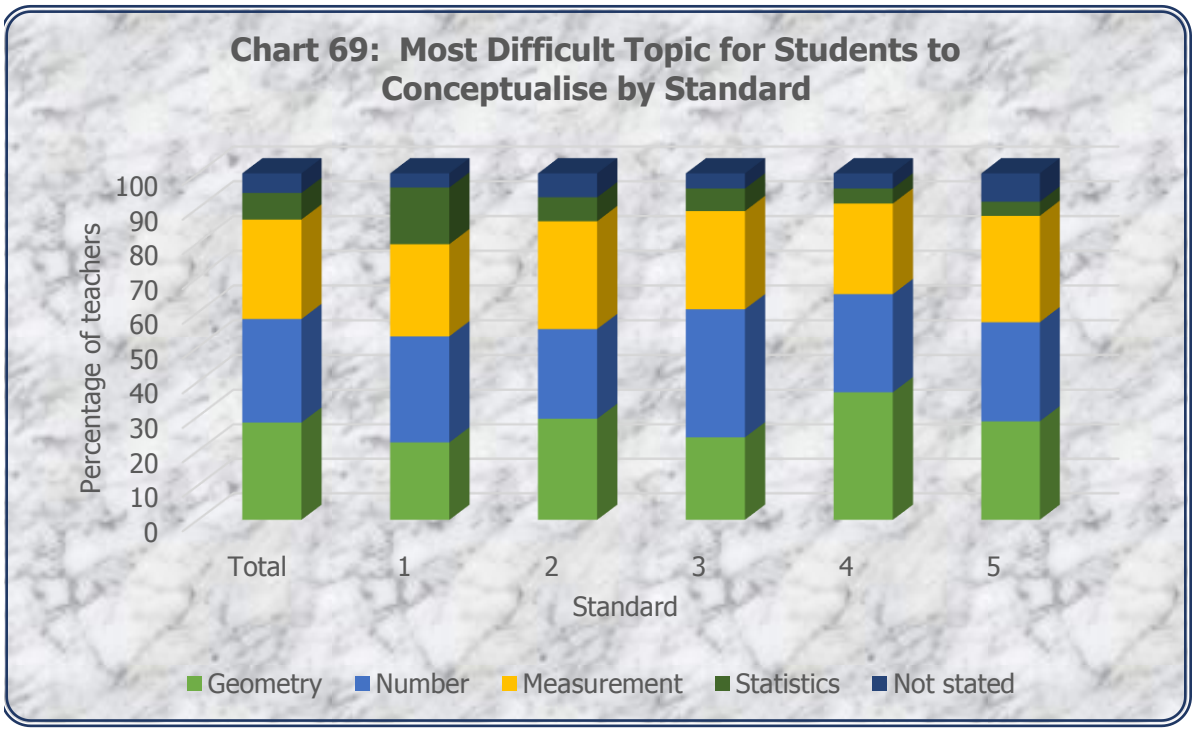
Type of school	Mathematics topic	Preparedness - percentage of teachers					
		Total	Very well-prepared	Well-prepared	Somewhat prepared	A little prepared	Not at all prepared
		(1)	(2)	(3)	(4)	(5)	(6)
All schools	Geometry	100	54	40	6	0	0
	Number	100	66	32	1	0	0
	Measurement	100	58	34	7	0	0
	Statistics	100	65	33	2	0	0
Government	Geometry	100	62	35	3	0	0
	Number	100	73	25	2	0	0
	Measurement	100	65	30	5	0	0
	Statistics	100	72	27	1	0	0
Government-assisted	Geometry	100	52	42	7	0	0
	Number	100	65	34	1	0	0
	Measurement	100	57	35	9	0	0
	Statistics	100	63	35	2	0	0
Private	Geometry	100	50	41	9	0	0
	Number	100	54	46	0	0	0
	Measurement	100	54	46	0	0	0
	Statistics	100	58	33	9	0	0

Table 75: Most Difficult Topic for Students to Conceptualise by Type of School and Standard

Type of school	Standard	Most difficult topic for students to conceptualise percentage of teachers					
		Total	Geometry	Number	Measurement	Statistics	Not stated
		(1)	(2)	(3)	(4)	(5)	(6)
All schools	Total	100	28	30	29	8	6
	Standard 1	100	22	31	27	16	4
	Standard 2	100	29	26	31	7	7
	Standard 3	100	24	37	28	7	4
	Standard 4	100	37	28	26	4	4
	Standard 5	100	29	29	31	4	8
Government	Total	100	24	33	31	7	4
	Standard 1	100	29	36	29	7	0
	Standard 2	100	7	29	50	7	7
	Standard 3	100	15	38	23	8	15
	Standard 4	100	33	33	33	0	0
	Standard 5	100	36	29	21	14	0
Government-assisted	Total	100	29	29	29	6	7
	Standard 1	100	22	28	28	16	6
	Standard 2	100	38	25	25	5	8
	Standard 3	100	26	39	32	3	0
	Standard 4	100	38	25	25	6	6
	Standard 5	100	21	30	36	0	12
Private	Total	100	38	23	8	31	0
	Standard 1	100	0	33	0	67	0
	Standard 2	100	25	25	25	25	0
	Standard 3	100	50	0	0	50	0
	Standard 4	100	50	50	0	0	0
	Standard 5	100	100	0	0	0	0

The survey results reveal that teachers were divided on what was the most difficult topic for students to conceptualise. Thirty percent (30%) of the teachers identified Number as the most difficult topic for students to conceptualise, followed closely by Measurement (29%) and Geometry (28%). A review of the data by type of school shows Number (33%) and Measurement (31%) were the two most difficult topics for students in government schools to conceptualise while in the government-assisted schools teachers were evenly divided among Geometry (29%), Number (29%) and Measurement (29%). A substantial percentage (38%) of the teachers in private primary schools reported Geometry as the most difficult topic for their students to conceptualise. A further examination of the survey results by Standard reveals that a higher percentage of teachers in Standards 3 and 4 identified Number (37%) and Geometry (37%) as the most difficult topic for students to understand respectively.





Source: Table 75

Table 76: Most Difficult Topic for Students to Conceptualise by Year - 2007 and 2017

Mathematics topic	Year - percentage of teachers	
	2007	2017
	(1)	(2)
Total	100	100
Geometry	18	28
Number	58	30
Measurement	17	29
Statistics	4	8
Not stated	3	6

Compared to the study undertaken in 2007, the data show an increase in the level of difficulty for students in all topics except Number which decreased from 58% in 2007 to 30% in 2017.

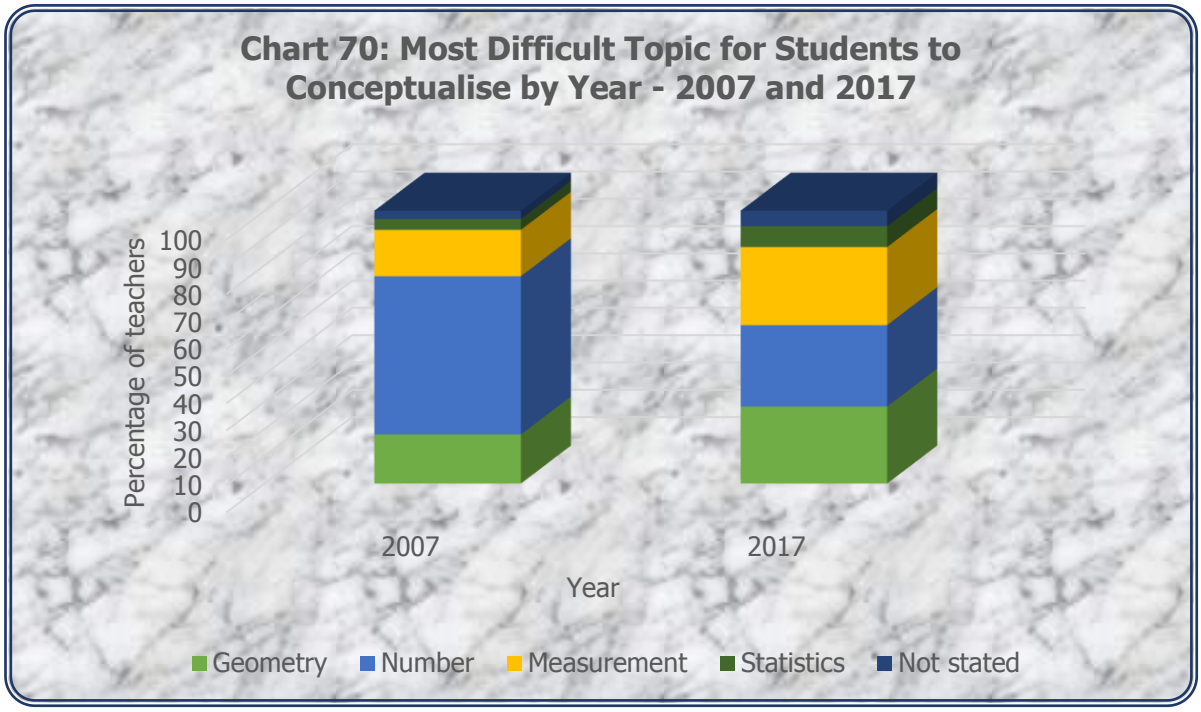


Table 77: Primary Level Mathematics Prepares Students for Mathematics at the Secondary School Level

Type of school	Primary level Mathematics prepared students for secondary school Mathematics - percentage of teachers			
	Total	Yes	No	Not stated
	(1)	(2)	(3)	(4)
All schools	100	91	8	1
Government	100	90	9	1
Government-assisted	100	92	7	1
Private	100	92	8	0

A significant majority of teachers (91%) agreed that primary level Mathematics prepared students for Mathematics at the secondary school level. Of the teachers who agreed that primary Mathematics prepared students for Mathematics at the secondary school level, approximately three-quarters (76%) of the teachers stated that it built the foundation - skills and knowledge - for students to study Mathematics at the secondary level.

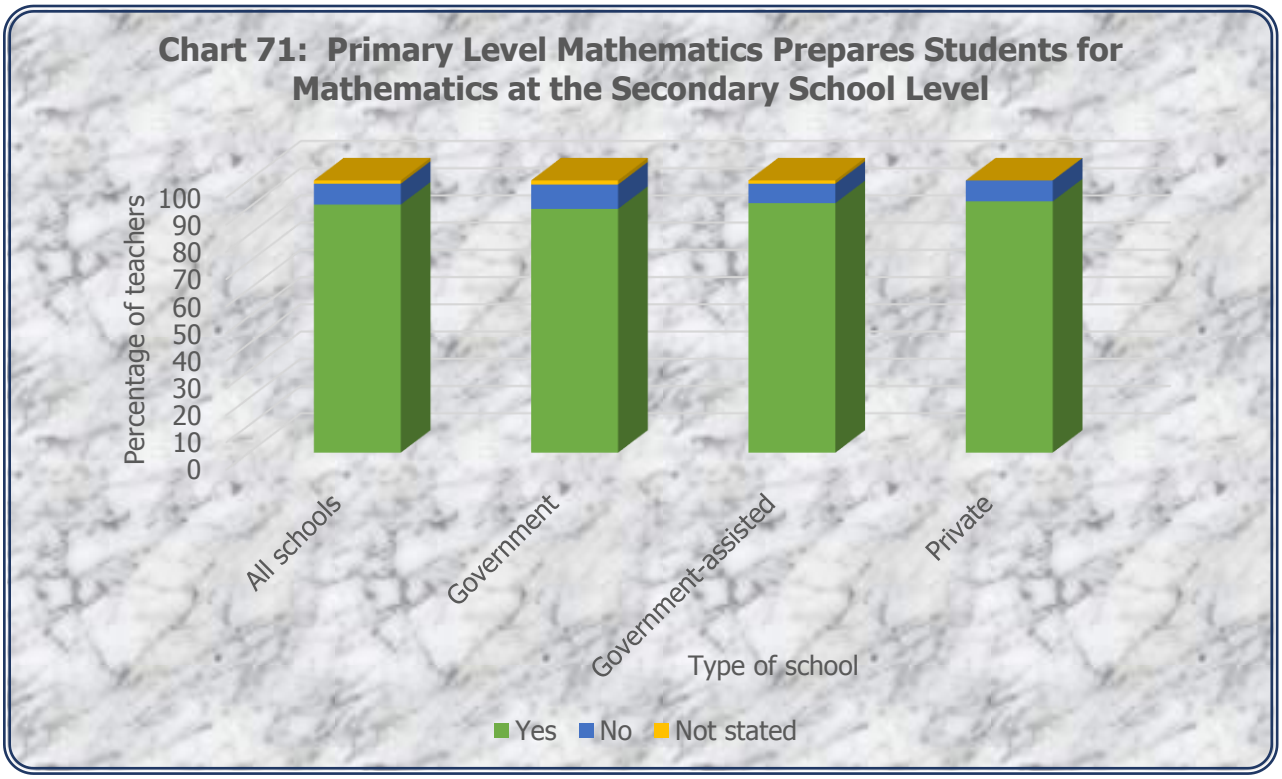


Table 78: Attended Mathematics Workshops by Educational District

Educational district	Attended Mathematics workshop in the last three years percentage of teachers		
	Total	Yes	No
	(1)	(2)	(3)
All districts	100	59	41
St. George West	100	53	47
St. George East	100	38	62
Victoria	100	68	32
Caroni	100	44	56
St. Patrick	100	67	33
St. Andrew/St. David	100	75	25
Nariva/Mayaro	100	82	18
Tobago	100	78	22

Table 78 shows teachers' attendance at Mathematics workshops over the last three (3) years by educational district. Over a half (59%) of the teachers surveyed attended Mathematics workshops during the last three (3) years while 41% did not attend. By educational district, Nariva/Mayaro recorded the largest proportion (82%) of teachers who attended Mathematics workshops followed by Tobago (78%) and St. Andrew/St. David (75%). The lowest percentage (38%) of teachers who attended Mathematics workshops in the last three (3) years was observed in St George East (Table 78). A further examination of the data by type of school reveals that a larger proportion (65%) of teachers in government-assisted schools attended Mathematics workshops over the last three (3) years compared to their counterparts in government (48%) and private (38%) schools (Table 79). Of the teachers who attended Mathematics workshops in the last three (3) years, Teaching Methods workshops were attended the most (59%) followed by Curriculum (53%), Problem Solving (49%) and Assessment (38%) (Table 80).

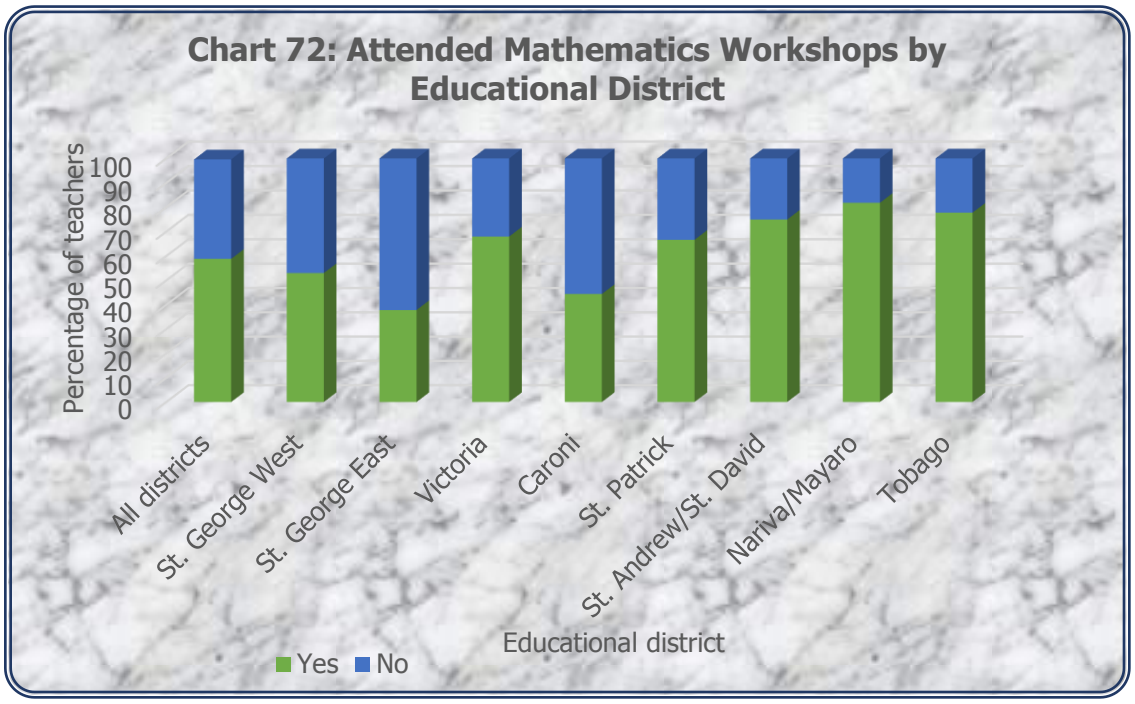


Table 79: Attended Mathematics Workshops by Type of School

Type of school	Attended Mathematics workshop in the last three years percentage of teachers		
	Total	Yes	No
	(1)	(2)	(3)
All schools	100	59	41
Government	100	48	52
Government-assisted	100	65	36
Private	100	38	62

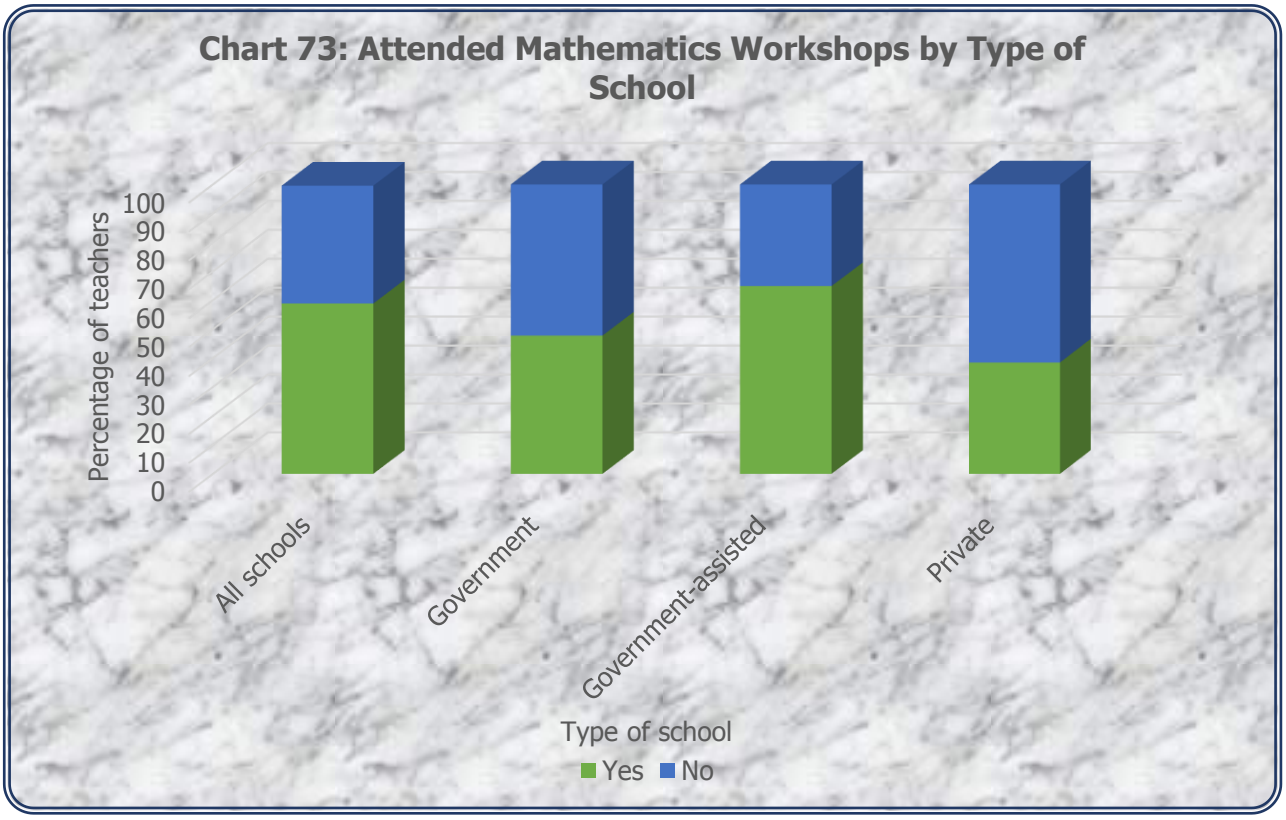


Table 80: Type of Mathematics Workshop Attended

Type of workshop	Attended - percentage of teachers		
	Total	Yes	No
	(1)	(2)	(3)
Curriculum	100	53	47
Assesment	100	38	62
Teaching Methods	100	59	41
Problem Solving	100	49	51