Ministry of Education, Science, Technology and Innovation

ConquerMaths Pilot Data Analysis & Report of Findings

Sept 11th 2013 – July 17th 2014

CONQUERMATHS CARIBBEAN (CMC) PILOT

In collaboration with the Barbados Ministry of Education, Science, Technology and Innovation

REPORT & ANALYSIS

Towards the end of the 2012 -2013 school year the Ministry of Education and ConquerMaths Caribbean invited 12 schools (primary and secondary) to participate in a pilot to help determine how best the ConquerMaths tutorials could be integrated within the math curriculum and taught from the classroom to enhance the teaching and learning of mathematics in Barbados.

Time Frame

The pilot commenced on September 11, 2013 with an official launch ceremony at the PomMarine Hotel and was initially planned for the first two school terms in the 2013-2014 school year. This was, however, extended to include the third term, after some schools experienced technical difficulties resulting in a late start in term one , coupled with much loss of teaching time in term two due to athletic activities.

School and Class Selection

Each school was assigned a different year level so that each level of the ConquerMaths curriculum could be tested. Each school then chose two classes - one to use ConquerMaths and the other, standard teaching without ConqerMaths.

SCHOOL	CLASS	TEACHER
Westbury Primary	Infants B	Charlene Alexander
Eden Lodge Primary	Class 1	Nakita Mayers
Lawrence T Gay Memorial	Class 2	Kimberly Davis
Wesley Hall Junior	Class 3	Susann Jordan
Charles F Broome Memorial	Class 4	John Gittens
Half Moon Fort Primary	Class 4	Dwight Holder
Fredrick Smith Secondary	Form 1	Katrina Bynoe
Ellerslie Secondary	Form 2	Dwaine Lewis
Deighton Griffith Secondary	Form 3	Dwayne Gamble
The Lodge School	Form 4	Charles Vanderpool
Springer Memorial	Form 5	Norman Atwell
Combermere	Ad 5th	Abigail Cumberbatch

Pre-Pilot Preparation

A workshop was conducted on June 10, 2013 to give hands-on training to teachers of the ConquerMaths classes. Areas covered included:

- ConquerMaths User Access
- ConquerMaths Curriculum Level Mapping
- Curriculum Designing
- Setting and Monitoring Homework Tasks
- Student, Class and Parent Reports
- Teacher and Student Administration

A pre test was first administered to students in order to establish baseline data. All but two of these schools administered the pre test. Despite this, both schools went on to use the tutorials in the selected ConquerMaths classes. Three schools were unable to continue in the Pilot due to internal administrative challenges in some cases and computer and internet access problems in others. The result was that nine schools were able to complete the pilot in varying degrees. These are Westbury Primary
Eden Lodge Primary , Lawrence T Gay Memorial, Wesley Hall Junior, Half Moon Fort Primary, Fredrick Smith Secondary , Deighton Griffith Secondary, Springer Memorial and Combermere.

Out of the nine schools pre and post test data was available for seven only. The two schools not represented are Half Moon Forte Primary and the Combermere School. Both teachers however, completed their questionnaires based on what they were able to accomplish under the circumstances.

Half Moon Forte Primary

The Half Moon Forte Primary School did not have a Non ConquerMaths class in the pilot and therefore was not in the pilot for the same reason as the other schools. They would have been assessed on the basis of their pre test and post test performance only. Unfortunately the ConnquerMaths class was unable to fully participate in the program for the entire year. Though they would have done the pretest and begun using the tutorials in the class in term one, at the beginning of the second term, the ITC who facilitated the class' participation in the program was repositioned to class 3 to replace a colleague who was off on sick leave. The ITC remained with the class for the remainder of the school year. As a result the program was not actively continued. General follow ups were made and students were asked to continue using the program at home to assist with their revision.

Combermere School

The teacher of the Combermere class had realized before the beginning of the pilot that the ConquerMaths curriculum did not cover all of the Advance Fifth Curriculum topics and therefore they would have been using ConquerMaths in class for Term 1 only. Both Classes would have done the pretest, however rather than doing a post test at the end of term one, it was decided that the end of term marks would have been used. Unfortunately, the teacher of the NCM class had to be away from school for a considerable length of time in term one, and as a result the teaching time and work covered by the two classes were vastly different and thus would not have provided a fair comparison.

CONQUERMATHS PERFORMANCE ANALYSIS

SCHOOL CLASS	TOTAL STUDENTS	Lessons Attempted						Lessons Passed						Average Efficiency Rating					
		Oct 2013	Nov 2013	Feb 2014	Mar 2014	May 2014	June 2014	Oct 2013	Nov 2013	Feb 2014	Mar 2014	May 2014	June 2014	Oct 2013	Nov 2013	Feb 2014	Mar 2014	May 2014	June 2014
WP Infants B	17	9	200	378	607	788	851	4	155	294	434	564	614	95.00	64.53	73.00	71.56	71.17	78.11
ELP Class 1	27	124	184	247	378	408	406	112	159	202	306	336	337	93.81	83.89	85.30	84.67	84.85	85.41
LTGM Class 2	24	285	468	598	718	793	807	214	336	436	544	580	592	83.00	80.44	81.3	80.52	79.38	79.81
WHJ Class 3	21	291	645	918	1090	1718	1774	207	466	638	744	1155	1192	84.55	82.86	77.60	75.73	73.09	83.32
HMFP Class 4	9	0	163	414	501	559	559	0	98	252	295	340	340	0	77.00	70.25	65	64.67	64.67
FSS Form 1	24	299	697	1195	1506	2041	2164	258	612	1009	1262	1717	1821	76.95	74.36	72.00	70.29	67.48	75.04
DG Form 3	30	0	0	186	190	275	277	0	0	155	159	222	225	0	0	77.19	79.11	78.83	79.06
SM Form 5	22	20	131	237	265	269	269	12	93	184	204	208	208	80.00	77.32	80.59	81.41	81.41	81.41
CM Ad 5th	31	197	222	239	239	295	295	180	200	215	215	262	262	82.67	79.29	82.10	82.10	81.27	81.27

Overall Average Efficiency Rating

The overall average Efficiency Rating (ER)[1] stands at 78.08% suggesting that in general, students have shown a strong grasp of the topics attempted. [1]

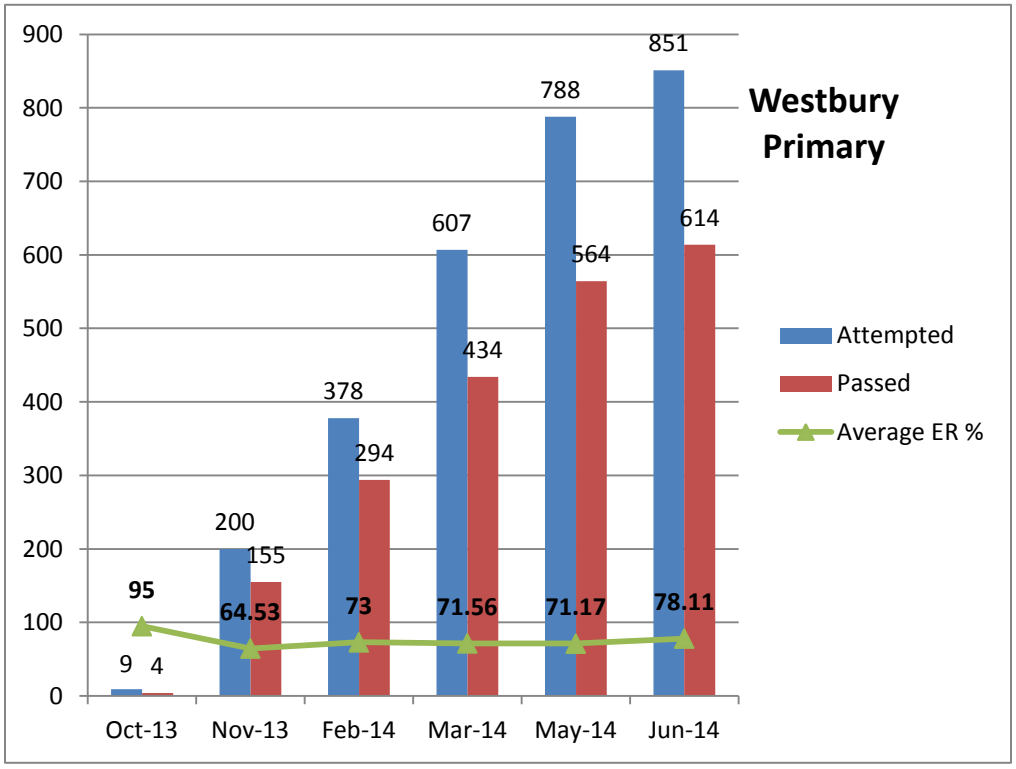
School	Average Efficiency Rating Mar 2014
Westbury Primary	71.56
Eden Lodge Primary	84.67
Lawrence T Gay Memorial	80.52
Wesley Hall Junior	75.73
Half Moon Fort Primary	65
Fredrick Smith Sec	70.29
Deighton Griffith	79.11
Springer Memorial	81.41
Combermere	82.10

ConquerMaths Data and Pre & Post Test Analysis by Class

1. Westbury Primary School

ConquerMaths Data

Westbury Primary						
Lessons	**Oct-13**	**Nov-13**	**Feb-14**	**Mar-14**	**May-14**	**Jun-14**
Attepted	9	200	378	607	788	851
Passed	4	155	294	434	564	614
AER	95	64.53	73	71.56	71.17	78.11



At the West bury Primary school, the weaker Infants B class was chosen for the ConquerMaths group. However,

- Both classes gained a 60+ average in the pre test, with the Non conquerMaths class having the edge – 68% to 64%.

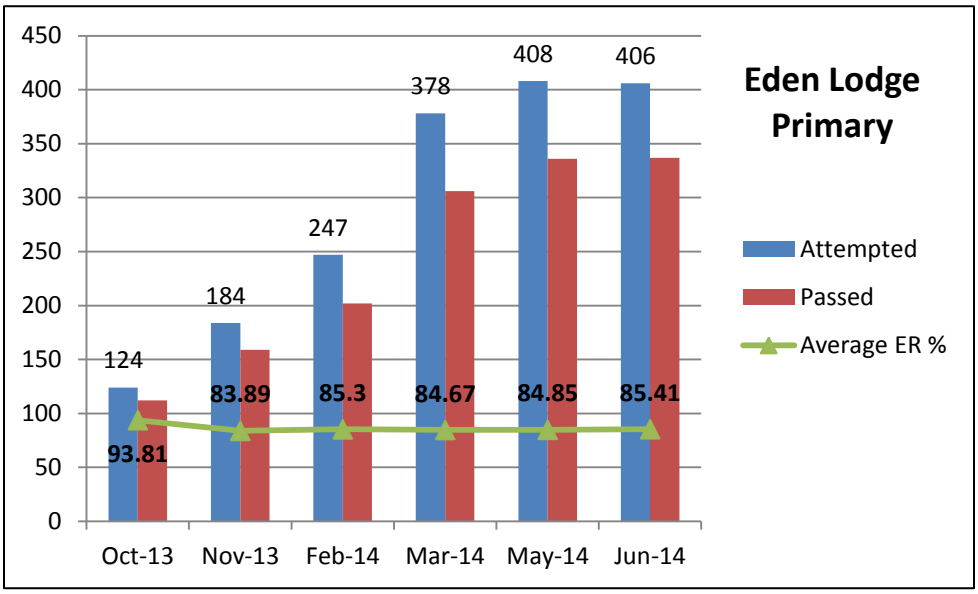
- However, in the post test, the ConquerMaths class gained a marginal edge with a 26% improvement on the pre test marks compared to a 25% improvement for the Non ConquerMaths class.

- Two students from the CM class gained 100% in their post test while the highest mark in the NCM class was 98%.

2. Eden Lodge Primary School

ConquerMaths Data

Eden Lodge Primary						
Lessons	**Oct-13**	**Nov-13**	**Feb-14**	**Mar-14**	**May-14**	**Jun-14**
Attempted	124	184	247	378	408	406
Passed	112	159	202	306	336	337
AER	93.81	83.89	85.3	84.67	84.85	85.41



Pre & Post Test Analysis

1A2 - CM Class		**Pre**		**Post**					
Cozier-Phillips	Siera	31		86					
Belgrave	Jaime	33		84					
Williams	Faith	24		71					
Giddings	Toquan	41		83					
Taitt	K'Shon	35		73					
Atherley	Christian	48		82					
Clarke	Zaki	20		52					
Maynard	Khaleel	37		69					
Griffith	Ranija	48		79					
Forde-Pinder	Oshea	50		75					
Holder	Evan	54		78					
Maynard	Faith	46		70					
Worrell	Daquon	37		60					
Jordan-Cyrus	Tashanna	30		52					

Callender	Nyesha	41		62					
Griffith	Dashawn	57		77					
Waterman	Chedan	31		50					
Elias-Gordon	Natisha	52		70					
Forde	Ramario	39		57					
Rouse-Herbert	Alana	30		48					
Griffith	Jeremiah	22		37					
Leon	Nathan	59		73					
Phillips	Kendra	56		67					
Reid	Rihannah	24		32					
Forde	Shadyn	59		66					
Lewis	Tiara	31		37					
Hinds	Ria	41		41					
		1076		**1731**	Sum				
		39.8519		**64**	Average				
			1731	**Post**					
			1076	**Pre**					
			655	**Improvement**					
1A1 - NCM Class		**Pre Test**		**Post Test**					
Jones	Rhea	39		83					
Greaves	Faith	63		97					
Holder	Raheem	56		90					
Yearwood-Harper	Ciara	28		60					
Grannum	Taleia	65		94					
Daniels	Jaden	50		78					
Oughterson	Danielle	56		84					
Worrell	Kiarra	57		85					
Hutson-Bryan	Jamila	57		82					
Archer-Clarke	Samaro	61		84					
Walcott	Nathan	67		90					
Cox	Alliyah	54		76					
Gaskin-Jordan	Samara	69		91					
King	Kyron	74		96					
Sealy	Shana	57		77					
Thompson	Denari	46		66					
Daniel	Abigale	78		97					
Downes	Shaquon	50		69					
Millar	Terrisa	52		71					

Goodridge	Jahmani	71		88					
Reid	Kamau	81		98					
Boyce	Kiara	70		84					
Brathwaite	Derrick	78		90					
Gibson	Arianna	76		87					
Holford	Tiann	80		89					
Yearwood	Simieon	69		51					
Jordan	Shakeira				74	No pre test, hence excluded from analysis			
Sandiford	Davonte				78	No pre test, hence excluded from analysis			
		1604		**2157**	Sum				
		61.6923		**82.9615**	Average				
			2157	**Post**					
			1604	**Pre**					
			553	**Improvement**					

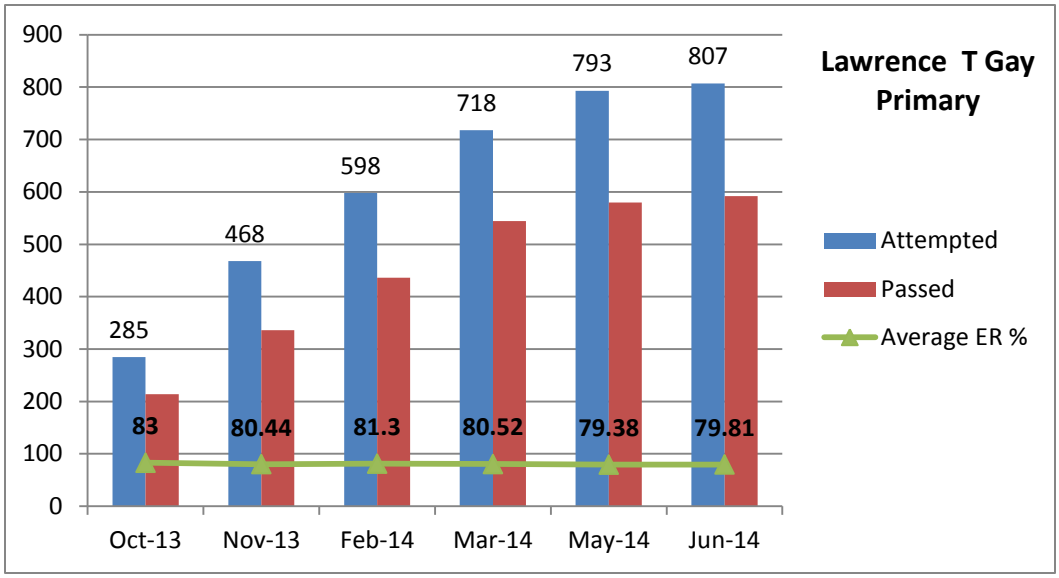
At Eden Lodge Primary, the class 2 chosen to do ConquerMaths was weaker in Mathematics than the Non ConquerMaths class. However, at the end of the pilot:

- The ConquerMaths Class post test marks showed a 61 % improvement on their pre test average, compared to a 34% improvement for the NCM class.
- The ConquerMaths Class pre test passes above 50% increased by 15 students in the post test, compared to an increase of 3 students in the Non ConquerMaths class.
- In their post test score, 6 students from the ConquerMaths class recorded over 100% improvement on their pre test scores, compared to 1 student from the Non ConquerMaths class.

3. Lawrence T Gay Primary School

ConquerMaths Data

Lawrence T Gay Memorial						
Lessons	**Oct-13**	**Nov-13**	**Feb-14**	**Mar-14**	**May-14**	**Jun-14**
Attempted	285	468	598	718	793	807
Passed	214	336	436	544	580	592
Average ER %	83	80.44	81.3	80.52	79.38	79.81



Pre & Post Test Analysis

2 DAVIS (CM)			**Pre**		**Post**					
Beckles	Indya		88		82					
Cummins	Adonai		50		55					
Dyall	Naquaya		73		73					
Garnes	Christian		77		81					
Gibson	Miracle		85		73					
Haynes	Jason		88		90					
Haynes	Ranesha		63		44					
Headley	Jamar									
Hinds	Ranuco		31		42					
Howard	Omari					59 - No pre test, hence excluded from analysis				
Hoyte	Dmitri		83		92					
Lambert	Selena	72 - No post test, hence excluded from analysis								
Leacock	Kiokya		65		85					
Mayers	Darien		88		87					
Maynard	Sondre		81		94					
Newton	Destiny		96		91					
Phillips	Taurean		65		80					
Scott	Denisha		75		78					
Small	Keishana		63		68					
Smith	Ebony		75		67					
Trotman	Shayne					92 - No pre test, hence excluded from analysis				
Ward	Aalijah		63		80					
Webster	Seon		77		86					
White	Reanne		**1386**		**1448**	SUM				
			72.94737		**76.21053**	Average				

				1448	**Post**					
				1386	**Pre**					
				62	**Improvement**					

2 ROACH (NCM)			**Pre**		**Post**					
Alleyne-King	Rhajan		92		85					
Brewster	Amara		83		84					
Gilkes-Trim	Juliva					93 - No pre test, hence excluded from analysis				
Graham	Riane		90		98					
Grant-Grace	Keona		73		68					
Greene	Makala		42		33					
Griffith	Ashani		79		75					
Griffith	Rashelle		90		94					
Hurley	Joshua		94		95					
King	Ramon		96		98					
Lewis	Nubian		58		53					
Lynton	Ramya		92		87					
Mars	Keimara		62		62					
Marshall	Ciara		87		93					
Marshall	Kai-Shae		73		71					
Mayers	Qattara		96		87					
Mayers	Tyshoina		88		78					
Roach	Alicia		94		91					
Sandiford	Shakora		71		73					
Sandy	Telira		90		92					
Tash	Aurique		79		73					
Taylor	Faith		85		81					
Welch	Radavie		62		53					
Worrell	Justin		92		92					
			1868		**1816**	Sum				
			81.21739		**78.95652**	Average				
				1868	**Pre**					
				1816	**Post**					
				52	**Improvement**					

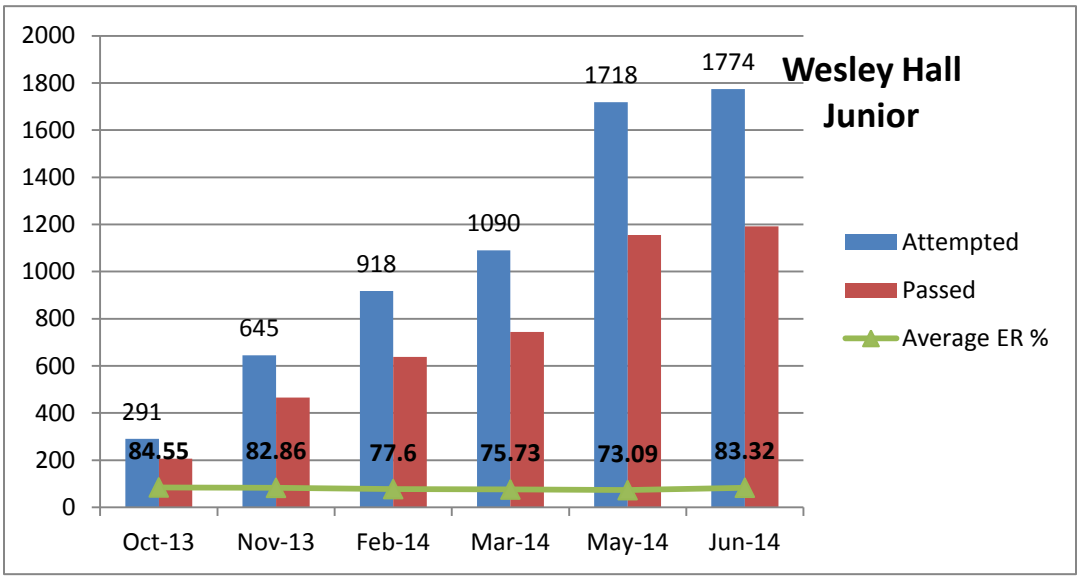
- The weaker class was chosen as the CM class. This became evident by the CM class gaining an average of 73 % in the pre-test compared to 81 % for the NCM class – 8% less.
- In the post-test the difference between the two class averages was reduced by more than half to just 3%, with the NCM class gaining 78% and the CM class gaining 76%.

- The CM class recorded the greater improvement in their post-test marks, 4% compared to 2 % for the NCM class. The CM class increase was 62 marks compared to 52 for the NCM class.

4. Wesley Hall Primary School

ConquerMaths Data

Wesley Hall Junior						
Lessons	**Oct-13**	**Nov-13**	**Feb-14**	**Mar-14**	**May-14**	**Jun-14**
Attempted	291	645	918	1090	1718	1774
Passed	207	466	638	744	1155	1192
Average ER %	84.55	82.86	77.6	75.73	73.09	83.32



Pre & Post Test Analysis

3E (CM)			**Pre**		**Post**					
Crichlow	Akeil					51 - No pre test, hence excluded from analysis				
Banister- Inniss	Tyrell		81		64					
Watson	Rashon		79		61					
Archer	Tishawn		65		56					
Walcott	Kayliah		64		42					
O'neale	Shaian			63 - No post test, hence excluded from analysis						
Jones	Khai		63		58					
Hoyte	Dakaisha		63		47					
Chase	Aaliyah		62		49					
Crawford	Jala		60		57					

Holder-Fields	Emique		60		44					
Mottley	Amari		59		71					
Stuart	Kaieysha		57		44					
Millar	Shakenya		53		29					
Alleyne	Amaru		52		53					
Carter	Calebe		51		47					
Howell	Destiny		49		40					
Stanford	Akaiyo		49		44					
Haynes	Shaunte		40		26					
Watts	Dayshoun		40		31					
Drakes	Shadd		40		36					
No name						57 - No pre test, hence excluded from analysis				
			1087	SUM	**899**	SUM				
			57.21053	Average	**47.31579**	Average				
				899	**Post**					
				1087	**Pre**					
				-188	**Improvement**					
3W (NCM)			**Pre**		**Post**					
Griffith	Samuel		88		64					
Bynoe-Forde	Damani		86		94					
King	Marcus		85		75					
Ramcharran	Hadesh		84		78					
Douglas	Kairo		84		74					
Holder	Trishan		79		57					
Thorpe	Chante'		79		61					
Goodridge	Trezain		77		61					
Austin	Trenell		75		44					
Thompson	J'Nai		74		86					
Thompson	Zane		73		44					
Padmore	Tyrese		72		75					
Phillips	Kimia		72		49					
Browne	Ajani		69		53					
Walcott	Alyssa		69		64					
Cox	Lamar		68		49					
Hunte	Rae-Anna		68		74					
Raja	Amirah			67 - No post test, hence excluded from analysis						
Wiltshire	Taurique		67		51					
Browne	Janae		67		72					
Downes	Kaliq		65		50					
Crookendale	Jaleel			57 - No post test, hence excluded from analysis						
Brathwaite	Devante'		56		40					
Trotman	Destiny		56		38					

Blades	Khalil		51		36					
Weekes	Kayla					61 - No pre test, hence excluded from analysis				
Devonish	Ciera					51 - No pre test, hence excluded from analysis				
			1664		1389	Sum				
			72.34783		60.3913	Average				
				1389	Post					
				1664	Pre					
				-275	Improvement					

- The stronger class was chosen as the NCM class. This was evident with the NCM class gaining an average of 72 % in the pre test compared to 57 % for the CM class.

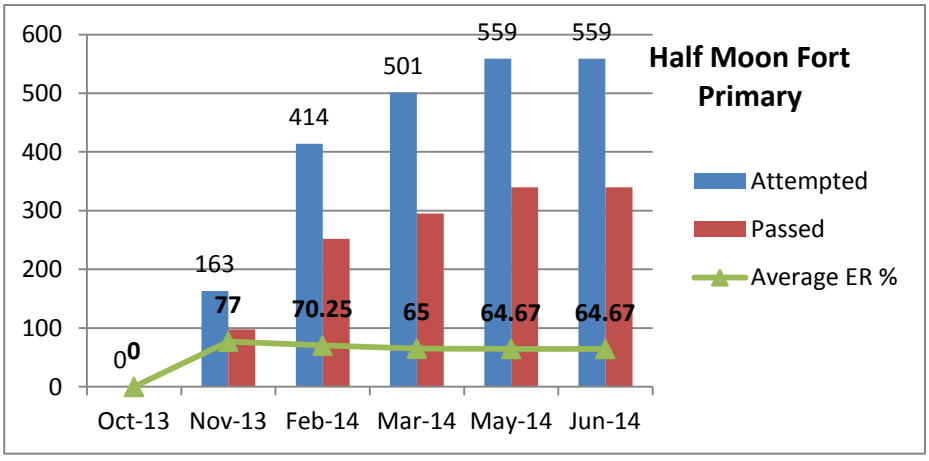
- At the Wesley Hall Primary school both classes registered an average in their post test that was below their pre test average.

- However, the NCM class recorded the greater decline in the post test: 12% compared to 10 % for the CM class. The NCM class reduction was -275 marks compared to -188 for the CM class.

5. HALF MOON FORT PRIMARY

ConquerMaths Data

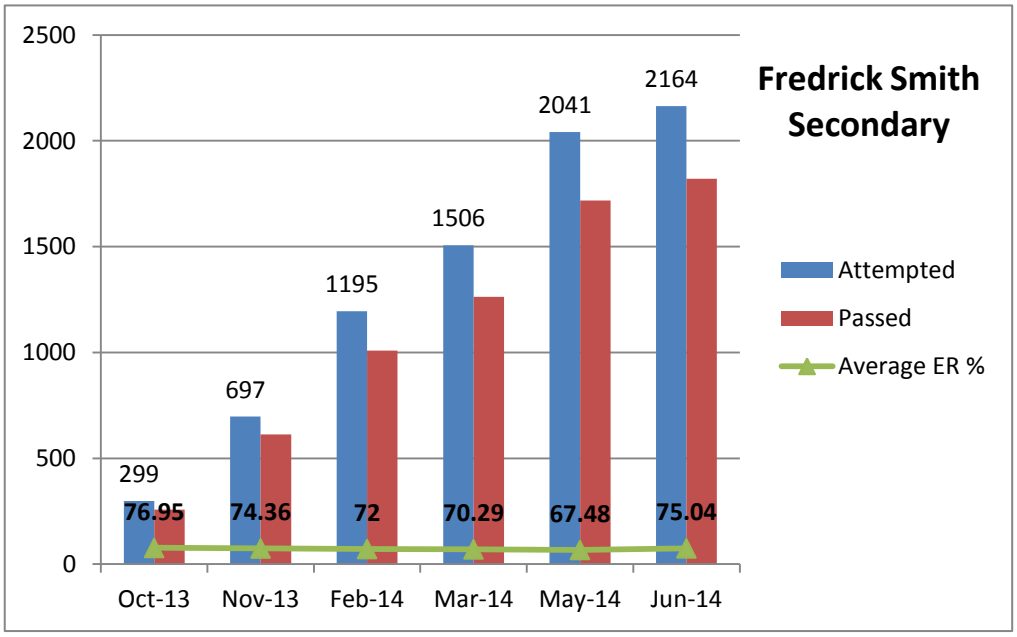
Half Moon Fort Primary						
Lessons	**Oct-13**	**Nov-13**	**Feb-14**	**Mar-14**	**May-14**	**Jun-14**
Attempted	0	163	414	501	559	559
Passed	0	98	252	295	340	340
Average ER %	0	77	70.25	65	64.67	64.67



6. Sir Frederick Smith Secondary School

ConquerMaths Data

Fredrick Smith Secondary						
Lessons	**Oct-13**	**Nov-13**	**Feb-14**	**Mar-14**	**May-14**	**Jun-14**
Attempted	299	697	1195	1506	2041	2164
Passed	258	612	1009	1262	1717	1821
Average ER %	76.95	74.36	72	70.29	67.48	75.04



Pre & Post Test Analysis

Form 1 CM		Pre		Post					
Shaquille	Anderson	25		44					
Aaliyah	Blanche	18		25					
Hakeem	Cadogan	18		57					
Kishmar		28		27					
Sasha	Estwick	16		33					
Dejada	Forde	12		23					
Jenna	Holder	39		71					
Shaquanna	Hunte	18		29					
Akayla	Hurley	24		25					
Curtis		29		20					

Daquan	Lowe	26		53					
Eljay	Maxwell	18		24					
Djenne	Mayers	18		42					
Ky-Mani	Nicholls	20		38					
Aliyah	Norville	25		28					
Tiara	Rock	25		68					
Zebulun	Sawh	22		33					
Jahroy	Springer	25		53					
Tyrece	Thompson	21		43					
Declan	Ward	27		74					
Shenico	Williams	20		54					
Zaheer	Griffith				38 - No pre test, hence excluded from analysis				
		474		**864**	SUM				
		22.57143		**41.14286**	Average				
			864	**Post**					
			474	**Pre**					
			390	**Improvement**					
Form 1 NCM		**Pre**		**Post**					
Nickaela		18		40					
Nakayla		21		31					
Ryanna		15		34					
Deangelo		30		34					
Shaquem		20		28					
Aakeidra		22		26					
Tyrese		16		21					
Rodeidra		17		26					
Shania		17		29					
Tyrece		16		31					
Ryanna		12		33					
Xavier		16		29					
Karl		23		36					
Shaylee		20		26					
Joshah		8		21					
Kevon		11		29					
Shaunte		18		41					
Kiara		18		29					
		318		**544**					
		17.66667		**30.22222**					
			544	**Post**					
			318	**Pre**					

			226	**Improvement**				

The first form students at the Sir Frederick Smith Secondary School would have been allocated based on mixed ability and therefore would have been generally at the same level in their mathematics. This was evidenced by a marginal 5% difference in the average marks gained in the pilot pre test.

- After three terms, however, the ConquerMaths class had a total increase in marks of 390 compared to 226 for the Non ConquerMaths group in the end of year exam.

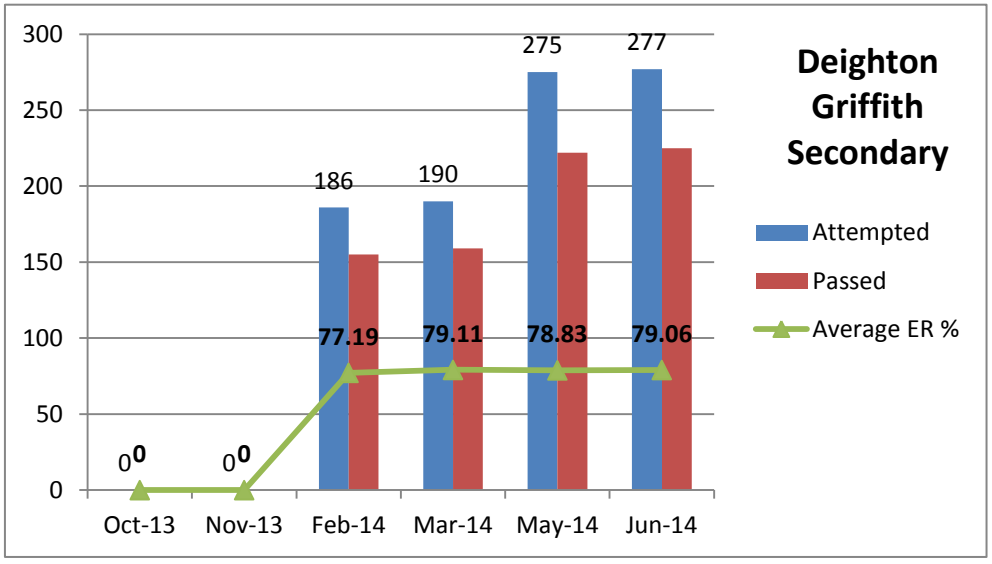
- The CM class pre-test marks increased by 82 % in their post-test compared to an increase by 71% for the NCM class which is 11% better than the NCM class.

- In the exam taken at the end of the pilot in term three, the Non ConquerMaths class had no one passing above 50%, with the two highest marks being 41 and 40 %. Whereas, the ConquerMaths class had 7 students passing over 50% - the two highest being 74 and 71%. The top student actually scored just 20% in the pre test.

7. Deighton Griffith Secondary School

ConquerMaths Data

Deighton Griffith						
Lessons	**Oct-13**	**Nov-13**	**Feb-14**	**Mar-14**	**May-14**	**Jun-14**
Attempted	0	0	186	190	275	277
Passed	0	0	155	159	222	225
Average ER %	0	0	77.19	79.11	78.83	79.06



Pre & Post Test Analysis

DEIGHTON CM			**Pre**		**Post**					
Als	Antonia		16		29					
Boxill	Lejandra		39		73					
Brathwaite	Dana		44		56					
Broomes	Aaliah		33		47					
Bullen	Marissa		5		24					
Clarke	Tremaine		11		21					
Clarke	Zeneta		31		38					
Coppin	Sadio					49 - No pre test, hence excluded from analysis				
Gale	Eboni		26		47					
Gaskin	Tanisha		13		27					
Glasgow	Jonathan		20		55					
Gollop	Zion					65 - No pre test, hence excluded from analysis				
Green	Davia					31 - No pre test, hence excluded from analysis				
Griffith	Jelani		14		42					
Harding	Akiel		13		21					
Harewood	Qeturah		56		53					
Hayley	Tremaine					No pre or post test, hence excluded from analysis				
Haynes	Malik		28		51					
Husbands	Rache'		20		44					
Inniss	Acobie		13		29					
Jones	Rochelle		19		27					
Jones	Rashana		34		76					
Naraine	Pooja		20		55					
Reveira	Ari		34		88					
Sawh	Simeon		31		49					
Sealy	Shanice					40 - No pre test, hence excluded from analysis				
Stoute	Saadiq		11		20					
Welch	Faith		17		61					
Wiseman	Shaneal		16		37					
			564		**1033**	SUM				
			23.5		**45.26087**	Average				
				1033	**Post**					
				564	**Pre**					
				469	**Improvement**					
DEIGHTON NCM			**Pre**		**Post**					
Arthur	Shaquan		11		34					

Callender	Ondre		28		33					
Danzell	Anisha		25		43					
Edwards	Terrance		38		47					
Fergusson	Joshua		17		46					
Forde	Cherish		44		43					
Forde	Leondre		16		53					
Greene	Josiah		36		35					
Ifill	Tia-Maria		22		44					
Inniss	Tiara		27		24					
Layne- Husbands	Kurrel		34		23					
Lewis	Kashaka		22		36					
Mason	Kamresha		11		45					
Mc Millan	Monique		13		51					
Parsons	Rashawn		19		52					
Poleon	Leonje		30		24					
Reshauna	Ollivierre		38		49					
Rollins	Justin		33		38					
Small	Shaquilla		0		48					
Thomas	Aaron			14 - No post test, hence excluded from analysis						
Thompson	Cherran		41		25					
Thornhill	Keiyara		14		36					
Trotman	Destinee		23		55					
Turpin	Trishon		19		40					
Walcott	Mariah		13		20					
White	Jahmai		13		40					
			587		**984**	SUM				
			23.48		**39.36**	Average				
				984	**Post**					
				587	**Pre**					
				397	**Improvement**					

Similarly, at the Deighton Griffith School there was no difference in mathematical ability between the third form ConquerMaths Class and the Non ConquerMaths class, both of which gained 23% average in the pre test.

- By the end of the pilot, the Conquermaths class had registered a 45% average compared to a 39% average for the Non ConquerMaths class.

- In the end of year exam, the ConquerMaths class had an increase in total marks of 469 compared to 397 for the Non ConquerMaths group. This represented an 83% percent improvement on the pre test score for the ConquerMaths class compared to a 68% improvement for the Non ConquerMaths class.

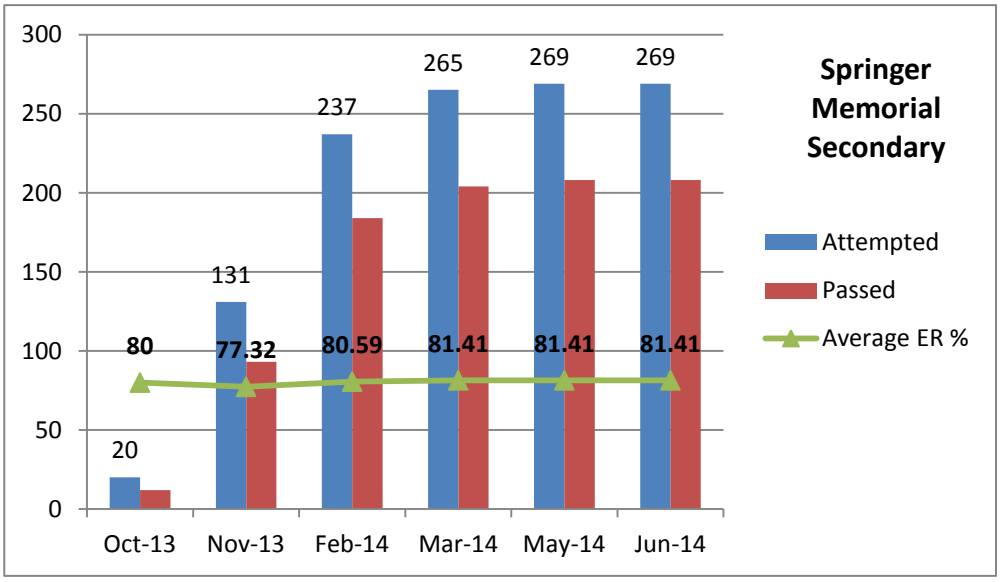
- In the exam taken at the end of the pilot in term three, the Non ConquerMaths class had 4 passes above 50%, with the two highest marks being 53 and 55%. Whereas, the ConquerMaths class had 10

students passing over 50% - the two highest being 76 and 88%. These two top students had both scored 34% in their pre test which is over 100% improvement.

8. Springer Memorial Secondary School

ConquerMaths Data

Springer Memorial						
Lessons	**Oct-13**	**Nov-13**	**Feb-14**	**Mar-14**	**May-14**	**Jun-14**
Attempted	20	131	237	265	269	269
Passed	12	93	184	204	208	208
Average ER %	80	77.32	80.59	81.41	81.41	81.41



Pre & Post Test Analysis

SPRINGER CM Class	Pre		Post					
Best, Kylicia	89		92					
Browne, Reann	63		60					
Chassang, Richcheda	74		76					
Degia, Zohra	92		92					
Franklyn, Donisha	53		46					
Griffith, Toshelle	54		62					
Harewood, Krystal	76		48					
Hinds, Tanika	54		70					
Hurdle, Akilah	42		40					
John, Ayesha	53		40					
Kirton, Zakiya	69		62					
Marshall, Danielle	66		80					

Mcclean, Ashley	44		44					
Payne, Christiane	67		68					
Proverbs, Shadera	85		84					
Redman, Shakira	64		70					
Rice, Keianne	57		66					
Rollins, Kyana	91		76					
Skeete-Antrobus, Daneisha	77		90					
Went, Maria	68		70					
Williams, Shani	83		68					
Zephurin, Arianne	53		58					
	1474		**1462**	Sum				
	67		**66.45455**	Average				
		1462	**Post**					
		1474	**Pre**					
		-12	**Improvement**					
SPRINGER NCM Class	**Pre Pilot**		**Post Pilot**					
Aysha Bhikhu	66		82					
Nailah Clarke				58 - No pre test, hence excluded from analysis				
Kayla Cox	66		58					
Annice Gill	63		92					
Tahira Holder	54		48					
Janae Innis	91		74					
Tiffany Morris	73		64					
Tia Peters	57		46					
Jalisa Rudder	75		46					
Jade Searles	98		94					
Faith Smith	42		60					
Kylia Smith	45		44					
Shakalia Williams	73		72					
Ariel Wood	65		64					
Cydonee Gale	59		58					
Racquel Haynes	69		68					
Jenna Hunte	71		48					
Zhane Lyte	36		10					
Narupa Moonsammy	64		54					
Zoe Bullen	52		62					
Fabianna Clarke	42		8					
Jarissa Greene	45		40					
Hannisha Hoyte	56		28					
Tameisha Ifill	62		56					
Krysan Pinder	69		20					
	1493		**1296**	Sum				

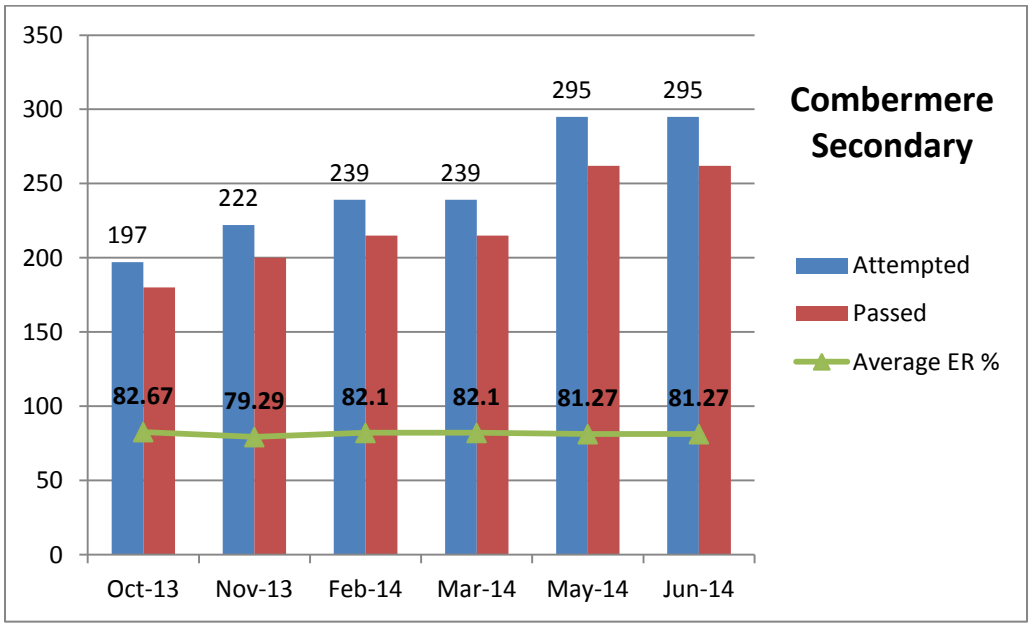
	62.20833		54	Average				
		1493	Post					
		1296	Pre					
		-197	Improvement					

- Both the 5th form ConquerMaths and the Non ConquerMaths classes at the Springer Memorial School began at the same level of mathematic ability, each having a 60+ % average.

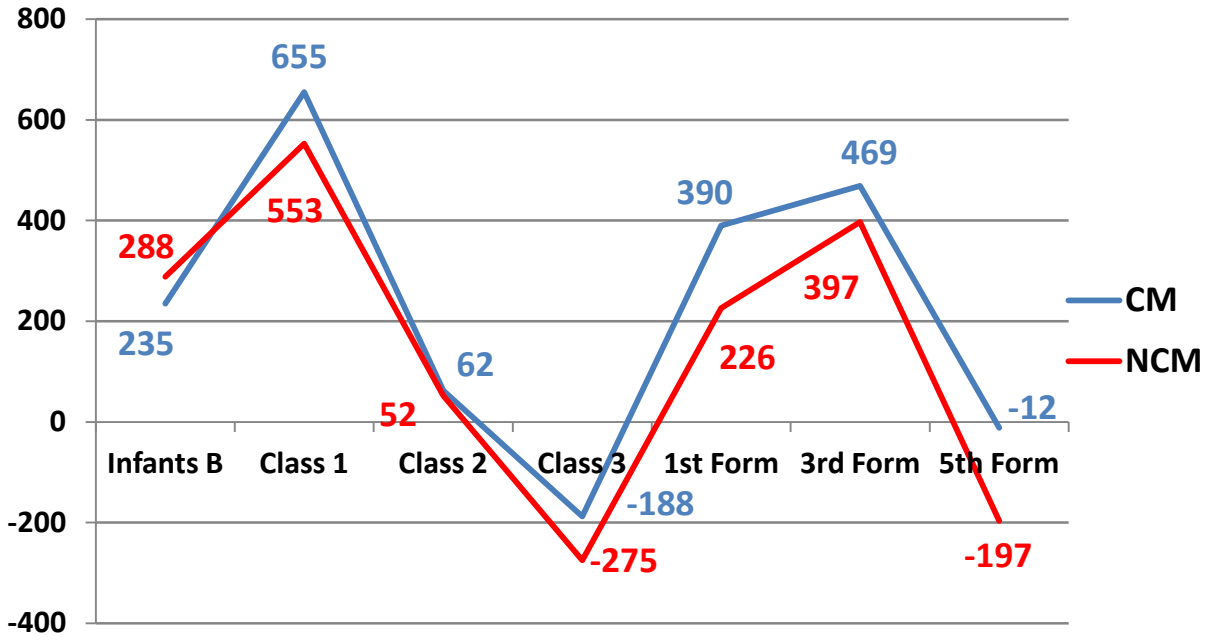
- After using the CM tutorials in the pilot for terms 1 and 2, the CM class average in the term 2 exam exceeded the NCM class average by 12% (66.4 % to 54%)
- The NCM class had 10 students scoring below 50%, with the two lowest being 8% and 10 %. Whereas, the CM class had 5 students below 50% -the two lowest being 40%.

COMBERMERE SECONDARY

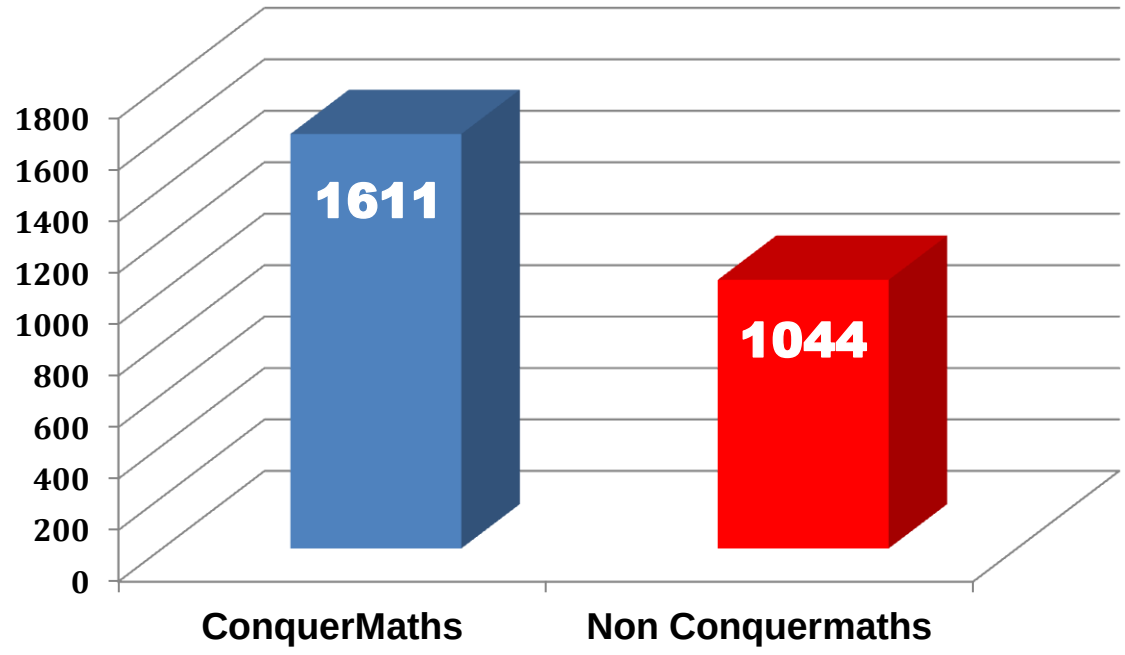
Combermere						
Lessons	**Oct-13**	**Nov-13**	**Feb-14**	**Mar-14**	**May-14**	**Jun-14**
Attempted	197	222	239	239	295	295
Passed	180	200	215	215	262	262
Average ER %	82.67	79.29	82.1	82.1	81.27	81.27



Graph showing comparison of improvement marks for the Non ConquerMaths class (Red) and the ConquerMaths class (Blue).



Graph below showing that the total improvement marks from the pre test to the post test for the CM Classes was 1611 compared to 1044 for the NCM class, which is 567 marks more than the NCM class.



A Sample of student responses to the question:

Please write what you think about ConquerMaths

Primary – Infants B

1. I think about the work that they give to help us learn, that is what I think about ConquerMaths.
2. I love to go on ConquerMaths.
3. ConquerMaths is fun.

Primary – Eden Lodge Primary: Class 1

1. I like ConquerMaths because we get to do it and do maths right and I like maths to learn maths.
2. I think that ConquerMaths was easy. It helped me to do more Maths that ConquerMath is easy because it has lots of Maths. I think I love Adding the most.
3. ConquerMaths is easy for me to do. Iera
4. Ithink ConquerMaths is good to help other children learn.
5. I think ConquerMaths is easier than Grammar. Oshea
6. It is easier for me on ConquerMaths. I love conquermaths

Primary – Wesley Hall Primary : Class 3

1. ConquerMaths is very enjoyable it is a lot of hard work. Soon from now I will get ConquerMaths as my best math network. Love miss Jordan my class teacher.
2. I think Conquer Maths was fun and educating. When I had maths work it was much easier. I was confident when I did the maths test and I enjoyed it and I love it. Thank you.
3. What I think about Conquermaths is that it is a sight that teaches me more. I like it and I hope we do it next term when we go into class four. I liked it and that is what I like about ConquerMaths.
4. I think that it help me more during class.
5. ConquerMaths helps you when your teacher was not around at home to help us with homework.
6. I think ConquerMaths is for student that really understand math and conquermaths is a fun lesson.

7. I think ConquerMaths is fun and work at the same time.

8. I think ConquerMaths is fun and If you don't understand a topic you can go on ConquerMaths and look for it. So to me ConquerMaths helps me understand my work much better.

9. I think ConquerMaths is a path to excitement. Sometimes teach you more work than is teach you in class. I love ConquerMaths, it is my best topic.

10. ConquerMaths is a site which helps you to do new work and learn you how to do new topics.

Secondary – Frederick Smith : 1st Form

1. It is good and I want to keep doing it.

2. I think ConquerMaths is better and will benefit throughout the years at Frederick Smith.

3. I think that ConquerMaths is much easier to do with my teacher when she teaches me at school. Sometimes I can be a little bit worried when it comes to doing work.

Secondary – Deighton : **3rd Form**

1. I think conquermaths is an educational experience although I did not use it often.

2. Conquermaths is ver helpful and should be used in all schools.

3. I think the conquermaths program is needed in schools for children to understand more in Math and do new things. ConquerMaths helped me in maths and I would tell any other student to use ConquerMaths.

4. ConquerMaths was a lot of help to me. Since I was using it my Maths mark went from 49% to 64.4%.

5. The ConquerMaths program is excellent, but they maybe some students who cannot afford or receive internet access, so that puts them at a disadvantage, because even if they do it at school on the computer. It is still possible that they will be left behind. So that could be taken into consideration.

6. Conquermaths is a new and innovative way to make learning easier. With a few adjustments and dedication this website can be made to create a better education with multiple achievements for our generation and those to come.

7. It is a good programme and I learned a lot from it. It taught me a lot and I did bette rin my maths in the earlier term.

8. I think ConquerMaths was excellent, because it was fn and easy to understand.

9. ConquerMaths is like a teacher at home. It helps me more with my maths work.

10. This site able me to learn more Maths than my teacher taught me.

11. Conquemaths is a good educational program that can help assist you in the topics you do in class.

12. ConquerMaths helped me a lot. Iwas able to learn different things I didn't know.

13. ConquerMaths I think is interesting and it teaches you what you haven't learnt in class.

14. ConquerMaths was very helpful to work I did not understand at first.

Secondary – Springer Memorial : 5th Form

1. The video tutorials on ConquerMaths have been very insightful and helpful in times of need as the tutor goes in depth with examples to the topic. Also the practice exercises and speed test are great sources of building skills in Maths.

2. I think that ConquerMaths is a very helpful program and I really like the way the tutorials are set up that both the slow and fast can understand. Although I really like the tutorials, sometimes they do not help much with the more difficult questions in a topic.

3. ConquerMaths is a bit hard and allows you to go out of your comfort zone and think more out the box. Sometimes, it causes you to come back to the question that is giving you trouble because you know you can get it done. ConquerMaths has helped me tremendously because the work that we were doing seem much easier. However, I would like ConquerMaths to put in a bit more examples and put in some of the past work into the new work.

4. Secondary – Combermere: Ad 5th Form

1. In my opinion, I think that conquerMaths is a very useful program. I am glad to be using this program as the tutorials help me understand problems much better. I also think that the speed skills were a lot of fun.

2. The video tutorials on ConquerMaths have been very insightful and helpful in times of need as the tutor goes in depth with examples to the topic. Also the practice exercises and speed test are great sources of building skills in Maths.

3. ConquerMaths wa an enjoyable experience. The video tutorials were very informative and easy to understand. The examples were very easy to follow. A few more examples and additional speakers would be appreciated.

4. ConquerMaths is a helpful site. It's video tutorials helped with questions that I did not understand and I like that it gives you a chance to do over a topic so that you can get a better mark than before. However, it needs better examples for further comprehension of the topic.

5. I think that conquerMaths is a very helpful program and I really like the way the tutorials are set up that both the slow and fast can understand. Although I really like the tutorials, sometimes they do not help much with the more difficult questions in a topic.

6. ConquerMaths is a good programme . It is very helpful and user friendly. This programme is very helpful in terms of the structure and wording of the examples, and the structure of the problem, but something that could be changed is that the tutorials examples are usually really easy and then the actual question are much harder and aren't that closely related to the examples.

7. ConquerMaths is a bit hard and allows you to go out of your comfort zone and think more out the box. Sometimes, it causes you to come back to the question that is giving you trouble because you know you can get it done. ConquerMaths has helped me tremendously because the work that we were doing seem much easier. However, I would like ConquerMaths to put in a bit more examples and put in some of the past work into the new work.

ConquerMaths Pilot Teachers Questionnaire – Page 1

(Numbers of teachers responding written in boxes)

	SECTION A – PREPARATION FOR THE PILOT	Not at all	To a minor extent	To a moderate extent	To a major extent
1.	The pre-pilot workshop enabled me to present the ConquerMaths lessons with confidence.	0	1	2	4
2.	I practiced using the Teacher Admin Centre and ConquerMaths before I started the pilot.	1	0	3	3
3.	I used the teacher Admin Centre to design curricula for my class or.	0	1	0	6
4.	I used the teacher area to create groups with different pass marks.	3	3	1	0
5.	The Principal facilitated my use of the ConquerMaths lessons at school.	0	1	2	4
6.	The Head of Department facilitated my use of the ConquerMaths lessons at school.	1	0	2	4
7.	The ITC facilitated my use of the ConquerMaths lessons at school.	0	1	2	4
8.	I have seen an increase in my students' interest in Maths as the pilot progressed.	0	1	2	4

ConquerMaths Pilot Teachers Questionnaire – Page 2

SECTION B – RESOURCES & METHODOLOGY	Never	Sometimes	Often	Always
9. Internet access was available to my class to do ConquerMaths.	1	2	1	3
10. Access to the computer lab was available to my students to do ConquerMaths when they needed to.	1	1	0	3
11. Laptops were available to my students to do ConquerMaths in the classroom.	2	2	1	1
12. Each student had individual access to a laptop or computer to do ConquerMaths.	1	1	4	1
13. I projected the lesson on a screen and my students viewed it again on their computers and did the exercises.	2	3	2	0
14. I used the chalkboard in between the ConquerMaths lessons to illustrate and reinforce some concepts.	0	2	3	2
15. I got my students to use their exercise books to write notes and work out the ConquerMaths exercises.	1	2	3	1
16. I gave my students other exercises and tests apart from the ConquerMaths exercises and topic tests.	0	2	2	3
17. I set homework tasks on ConquerMaths for my students to do with deadlines for completion.	0	3	2	2
18. I called parents to ask them to ensure that my students did homework and extra ConquerMaths at home.	3	3	1	0
19. I made checks in the teacher's area to monitor my students' use of ConquerMaths at school and at home.	0	0	2	5

ConquerMaths Pilot Teachers Questionnaire – Page 3

SECTION C – QUALITY OF THE LESSONS	Strongly disagree	Disagree	Agree	Strongly agree
20. The ConquerMaths lessons cover most of the topics in our school's math syllabus.	1	1	5	0
21. The lessons are short and to the point which helps my students to grasp the concepts and retain them easier.	0	0	6	1
22. The ConquerMaths concepts are taught step by step and this helps students to advance through the various levels.	0	0	6	0
23. Being able to replay the lesson at will, allows students to go over concepts they missed or didn't understand.	0	0	4	3
24. Being able to view lessons at home has helped my students to reinforce and revise topics done at school.	0	0	4	2
25. The highlighting of numbers, words and symbols as the teacher gets to them helps keep my students attention.	0	0	6	0
26. The illustrations and diagrams are animated and attractive, which helps my students to enjoy the lessons.	0	0	2	4
27. The instant feedback and corrections to the exercises motivates my students to try more questions.	0	0	4	3
28. The opportunity to repeat exercises challenges my students to keep bettering their previous marks.	0	0	4	3
29. The silver, gold and platinum certificates inspire many of my students to set personal goals and aim for their best.	0	0	3	3

ConquerMaths Pilot Teachers Questionnaire – Page 4

SECTION D – THE EFFECTS & BENEFITS	Strongly disagree	Disagree	Agree	Strongly agree
30. ConquerMaths has helped me to teach most topics more effectively.	0	2	3	1
31. I take less time to cover a topic using ConquerMaths than when I teach using the traditional method.	0	3	3	1
32. My enthusiasm in teaching Maths has increased as a result of using ConquerMaths in my lessons.	0	2	4	1
33. Because of ConquerMaths my students are more excited about learning Maths.	0	0	2	4
34. My students were able to go back to topics from earlier classes that they did not understand and relearn them.	0	0	3	3
35. My students are more willing to do homework tasks set on ConquerMaths than from their text books.	0	2	3	2
36. I have seen an improvement in many of my students Maths performance as a result of using ConquerMaths.	0	2	4	5

A sample of responses to some critical issues raised in the teacher questionnaires

ConquerMaths Pilot Teachers Questionnaire

SECTION C – QUALITY OF THE LESSONS	Strongly disagree / Disagree / Agree / Strongly agree
21. The lessons are short and to the point which helps my students to grasp the concepts and retain them easier.	**7 /7 Agreed / Strongly Agreed = 100%**
23. Being able to replay the lesson at will, allows students to go over concepts they missed or didn't understand.	**7 /7 Agreed / Strongly Agreed = 100%**
27. The instant feedback and corrections to the exercises motivates my students to try more questions.	**7 /7 Agreed / Strongly Agreed = 100%**
28. The opportunity to repeat exercises challenges my students to keep bettering their previous marks.	**7 /7 Agreed / Strongly Agreed = 100%**

SECTION D – THE EFFECTS & BENEFITS	
32. My enthusiasm in teaching Maths has increased as a result of using ConquerMaths in my lessons.	**5 /7 Agreed / Strongly Agreed = 71%**
33. Because of ConquerMaths my students are more excited about learning Maths.	**6 /7 Agreed / Strongly Agreed = 86%**
34. My students were able to go back to topics from earlier classes that they did not understand and relearn them.	**6 /7 Agreed / Strongly Agreed = 86%**
36. I have seen an improvement in many of my students Maths performance as a result of using ConquerMaths	**6 /7 Agreed / Strongly Agreed = 86%**

Please write any challenges you may have encountered that affected your execution of the pilot.

***Frederick Smith**: I believe that there were not enough questions to adequately test some topics to ensure that the student truly understood the topic.*

I found that when I was setting tasks for revision in term 3, the tasks would not show up for students who had passed the tasks previously, so it made revision a little difficult.

I know there is a gradual increase in difficulty in topics but from what I saw when the students did questions in one topic area, the questions didn't increase the difficulty because the questions were generated at random, which tend to discourage the weaker students sometimes.

I was not able to view the diagnostic tests before setting for my students.

A lot of students had tablets (Ipads) at home and it was difficult for them to login to ConquerMaths plus they did not like the look of the HTML format. Therefore it discouraged quite a few students from doing their tasks at home.

***Combermere**:*

Inadequate information as it relates to the topics to be covered on the CSEC Aditional mathematics Syllabus

Length of time it takes to get the system up and running due to connectivity (internet) , hardware issues such as no volume

***Wesley Hall**: There were four major challenges:*

1) The internet was inconsistent which meant it either ran very slow or we could not get connected for many lessons.

2) Some students didn't have their own computer or tablet at home .Although parents were encouraged to seek alternative access this was not done for most of the duration of the pilot.

3) The computer hardware gave their various issues each lesson a new surprise due to the age of the systems, which frustrated some students.

4) Due to the fact that the systems were also being shared for the School IT Programme having computer batteries die before the complete lesson occurred. This would happen for either my class or his, since the classroom only has two plugs. It limited the amount of students who could correct this problem when it occurred.

***Eden Lodge**: The first challenged encountered was the steady supply of internet, my school changed service providers and that remedied that problem. My biggest challenge however, was not having an IT LAB . This crippled the frequency in which the program was used. When I did use Conquer Maths it was a very strenuous exercise as I has to bring the laptops to my class, set up and then return them and put them back into the canister.*

***Westbury**: There were many challenges experienced pre-execution and during. Some of them I would have mentioned to both Mr. Winston Cumberbatch and Mr. Alex Cumberbatch and would prefer not to state them in writing. However I will state that:*

An apparent disinterest or lack of a buy-in to the program, its objectives and goals by some members of the staff (those whose assistance was necessary) posed numerous challenges throughout the school year.

As of to date the internet access that LIME would / should have provided was inaccessible from my classroom for the entire school year hence no classroom activities utilizing the program.

***Half Moon Forte**: Unfortunately our school was unable to actively fully participate in the program for the entire year. At the beginning of the second term, the ITC who facilitated the class' participation in the program was repositioned to class 3 to replace a colleague who was off on sick leave. The ITC remained with the class for the remainder of the school year. As a result the program was not actively continued. General follow ups were made and students were asked to continue using the program at home to assist with their revision.*

ConquerMaths Pilot Teachers Questionnaire – Page 5

Please write your feelings about ConquerMaths and its potential for lowering the high failure rate of Mathematics in Barbados and the region.

Springer: *ConquerMaths is a wonderful Mathematics software. The interactive nature of the program kept students engaged and highly motivated. Students repeated assigned tasks until their mark improved or until their received a certificate. Several students worked long hours into the night on the ConquerMaths assignments something that is lacking with paper and pen assignments.*

Frederick Smith*: ConquerMaths when used in its entirety has the potential for students to "go back to the drawing board" and start their learning of Mathematics from the beginning. Often students who do not grasp certain topics at a particular time are left behind and it is quite a challenge for teachers to get those students to "catch up". ConquerMaths is brilliant as it allows for students to learn Mathematics at their own pace. Together with the help of his/her teacher they can go back as far as they need to and take it from there. Eventually with perseverance and dedication these students will improve their competency no longer fear Mathematics but grow to enjoy the subject.*

Combermere*: Students with positive attitudes and good work ethic stand to benefit from the ConquerMaths program. It provides students with the opportunity to be taught a topic repeatedly at an time in the comfort of their homes. Students have to be willing to utilize the opportunity afforded them b this program if it is to be of some benefit. In addition the other factors contributing to low student performance must be addressed if the program is to be used successfully.*

Wesley Hall*: I think it has potential but not an automatic fix as I had hoped. It goes back to the child's full use of the programme. So once the child has full access and motivated it can make a slight difference in the child's overall scores.*

Eden Lodge*: Conquer Maths is a good program in which I enjoyed using. I believe that it has the ability to improve Mathematics in Barbados if used from reception. It would help to create a stronger foundation and evoke a greater enthusiasm about maths to the students. If the students are motivated they will perform better.*

Westbury*: The program created an excitement and enthusiasm for Mathematics that I have not seen before with students learning the subject; this may be due to the fact that it is animated, interactive and colourful. Should it be used nationally and regionally, it needs to be generic in some areas, e.g. money, not be country specific and have some concepts that were not available on the program, e.g. place value, slower / faster time, worded problems, etc.*

It creates competitiveness (students tried to surpass the grade that classmates near them achieved) and provides immediate feedback making this program an essential tool in the teaching of mathematics. It did not negate traditional methods but enhanced/ reinforced concepts. The program needs more worded problems for the majority of concepts – the high failure rate is not necessarily due to inability to solve mathematical problems but the inability to comprehend. Varying degrees of difficulty in each lesson are also essential to cater to the weakest to those who need to be challenged.

Half Moon Forte*: It is a good product, well produced and easy to use, the students were very excited to use the computer to help them better understand Mathematics.*

Please write suggestions as to how ConquerMaths can be effectively implemented and integrated in the Maths curriculum of schools nationwide.

***Springer**: I strongly believe that ConquerMaths should start in the First Year of Secondary School. This will definitely bring about an improvement in Mathematics results throughout the island. It should then be an ongoing program from First to Fifth Year.*

ConquerMaths should be timetabled into the school program so that one double lesson a week all Mathematics students would be allowed to use the computer lab for ConquerMaths.

***Frederick Smith**: Teachers will first need to be trained on how to effectively use the program. Also it would be very beneficial if every Maths class could use the Conquermaths program during one of their double lessons per week and concentrate on using it as a homework tool.*

***Wesley hall**: With better internet access and working computers is a great place to start in achieving an effective implementation.*

***Westbury**: For such a program to be effectively implemented and integrated across the board there needs to be a buy-in, not only for the teachers but for the ITCs as well. Their assistance in making the program successful is extremely important. Numerous issues that were experienced could have been avoided had that occurred. As was noted earlier, those students who had access to the program outside of school did considerably better than those without hence discounted rates from the various internet service providers will be beneficial.*

Conclusion

The ConquerMaths Pilot was executed over two terms for some classes and two and a half for others. The participants, both teachers and students, generally satisfied our expectations and met the requirements of the pilot. The vast majority of teachers and students were happy to use the tutorials and expressed their appreciation for the program in their responses. Despite the administrative and technical challenges that existed at the outset, which resulted in a few schools not being able to continue with the pilot, most schools were able to complete all the phases of the pilot.

We are delighted that the analysis of the ConquerMaths Usage and Pre & Post Test Data showed a higher level of improvement in the ConquerMaths classes than the Non ConquerMaths Classes as a result of using the program. It should be noted that these positive findings came after just two terms of exposure to the tutorials which suggests that with wider and longer use within the class room at both the Primary and Secondary level, with the added reinforcement at home, the performance of students in Mathematics can be greatly improved.

The Pilot also revealed some areas in the ConquerMaths curriculum that need improving and these and other recommendations made by both students and teachers will be passed on to the developers.

ConquerMaths Caribbean is satisfied from the analysis of the data and comments presented in this report that educators can feel confident that with proper management, the ConquerMaths tutorials and teaching resources can be successfully integrated within the Mathematics curriculum and teaching methodologies of schools throughout Bardados and the region.

We are also confident that with such an integration, made possible through the Ministry of Education, Science, Technology and Innovation with the support of corporate sponsors, in years to come marked improvements

will be seen in the day to day performance of mathematics in Barbados and in the region, with a corresponding increase in the pass rates at both the Common Entrance and CXC examinations.

Recommendations

In light of the positive findings coming out of this pilot ConquerMaths Caribbean wish to recommend the following strategies for integrating the ConquerMaths program within the school system.

1. **Should the Ministry of Education, Science, Technology and Innovation decide to implement the program at primary and secondary schools, we believe the roll out should begin with Class 3 and 4 at primary and 1st Form at secondary. These levels are being recommended because they represent the ending stage of primary school Mathematics education and the beginning stage of secondary school Mathematics education. Hence, by enhancing the teaching and learning of mathematics at these levels a sound foundation for the mastery of the subject at the higher levels will be established.**

   At the Primary class 3 and 4 level, students will be able to review what was learnt in class 1 and 2 and restudy any unlearnt topics that may present problems in secondary school if not grasped. They will also be able to enhance their preparations for the Common Entrance exam.

   At the first form level at secondary school, students will be laying a firm foundation of Mathematics knowledge and skill which will fit them to better handle the subject as it increases in difficulty at each consecutive level.

   Cooperate sponsorship can be attracted to assist in supplying students at these levels with the tutorials. ConquerMaths Caribbean has initiated dialogue with its sponsors in this regard and we welcome the Ministry's involvement as this dialogue continues.

2. **Symposiums can be organized by the Ministry of Education for Math teachers of Class 3 and 4 and 1st forms to be introduced to the ConquerMaths tutorials and teacher resources and to show how it can be effectively used within the classroom. Workshops can follow at various venues to provide hands of training to these teachers, which will be provided by ConquerMaths Caribbean free of cost.**

Appreciation

The directors of Conquermaths Caribbean and ConquerMaths UK take this opportunity to thank the Ministry of Education, Science, Technology and Innovation for partnering with us to execute this pilot. We are particularly gratefull to Mr. Paul Murphy and all the officers in the Program Implementation Unit for the hard work they put in from the start of the pilot to the finish. Special thanks is also extended to Senator Harry Husbands, the Chief Education Officer Mr. Laurie King and Deputy Chief Education officer Mrs. Karen Best for their endorsement and support of the pilot, especially at both the Opening and Closing Ceremonies.

Our heartfelt gratitude also goes out to all the Principals, Heads of Departments, IT Coordinators, teachers, students and parents of the schools that were chosen for the pilot for their participation.

Last, but certainly not least, we wish to say thanks to CIBC First Caribbean International Bank, Fujitsu Caribbean (Barbados) Ltd, and all the print and electronic media houses for sponsoring and providing coverage of the opening and closing ceremonies.

We look forward to the implementation of the ConquerMaths program within our schools in the not too distant future and the enhancement of the teaching and learning of mathematics throughout the region as a result.