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PRIMARY SCHOOL SUPPORT PROGRAM: A SCHOOL FEES PILOT (PSSP:SFP)

PUPIL ASSESSMENT FOLLOW-UP DATA REPORT, 2008

December 2008

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LIST OF ABBREVIATIONS

AIR	American Institutes for Research
ANCOVA	Analysis of Covariance
CRECCOM	Creative Centre for Community Mobilisation
IRT	Item Response Theory
ISEL-K/1	Illinois Snapshots of Early Literacy-K/1
MANEB	Malawi National Examinations Board
MCM	Mobilization Corps of Malawi
MIE	Malawi Institute of Education
MWAI	Miske Witt and Associates Incorporated
OVC	Orphan and Vulnerable Children
PCAR	Primary Curriculum Assessment Reform
PEA	Primary Education Advisor
PSSP:SFP	Primary School Support Program: A School Fees Pilot
RS	Raw Score
SS	Scaled Score
S.E.	Standard Error
SEMA	Senior Education Methods Advisor
TDC	Teacher Development Center
USAID	United States Agency for International Development
ZOC	Zonal Coordinator

1. INTRODUCTION

1.1. Background on PSSP:SFP

Primary School Support Program: A School Fees Pilot (PSSP:SFP) is a three-year initiative funded by USAID/Malawi in collaboration with the Malawi Government. The American Institutes for Research (AIR), in its lead role implementing PSSP:SFP in Dowa district, is responding to the need to improve the quality of education and serve as a pilot under a US Congressional mandate to develop strategies to reduce the cost of schooling that hinders access to education, especially for the most vulnerable. PSSP:SFP is jointly implemented with the Creative Center for Community Mobilization (CRECCOM), Malawi Institute of Education (MIE), and Miske Witt and Associates, Incorporated (MWAI).

The core goal of PSSP:SFP is to achieve equitable access to quality basic education. To reach this goal, the project has the following objectives:

- Increase access to basic education and improve learning with special focus on orphans, vulnerable children, girls and children with special needs.
- Increase resources at the school level.
- Improve teaching and learning outcomes in schools in Dowa.

PSSP:SFP takes a holistic approach to achieving these goals. It works to improve the professional development of teachers as well as mobilize communities to become owners of the schools.

1.2. Purpose of PSSP:SFP Pupil Assessments

Given pupils are the ultimate beneficiaries under PSSP:SFP, the project assesses pupils' performance as a measure of its impact on student learning. To monitor this impact of PSSP:SFP, the project annually assesses standard 1 pupils in Chichewa and standard 6 pupils in mathematics and English. The baseline assessment and the first follow-up were conducted in 2006 and 2007, respectively. The second follow-up was completed in September 2008. In addition to being conducted in Dowa, the PSSP:SFP implementation district, the assessments are also given to a sample of comparison schools in Dedza district.

1.3. Overview of Technical Report

This report provides the technical documentation on the content, administration, and analysis of the PSSP:SFP 2008 pupil assessments, and presents the 2008 results, with comparisons to 2006 and 2007. The Pupil Assessment Baseline Data Report (2006) and the Pupil Assessment Follow-up Data Report (2007) provide further information on the development of the assessment framework and test specifications, and baseline and 2007 follow-up assessment results.

2. INSTRUMENT DESIGN AND DEVELOPMENT

2.1. Standard 1 Chichewa Literacy Assessment

The standard 1 Chichewa literacy assessment was developed in 2006 by the AIR assessment team in collaboration with Malawian teachers and content experts. The task/content domain and number of items in the assessment are presented in Table 2-1. The development process was described in the Pupil Assessment Baseline Data Report (2006). The same instrument was used in the 2007 and 2008 test administrations. This instrument was administered one-on-one by project staff. Classroom teachers do not have access to this particular instrument.

Table 2-1 Task/Content Domain and Number of Items in Baseline Standard 1 Chichewa Literacy Assessment

Section	Number of test items
Phonemic Awareness	8
Word Naming	3
Letter Sounds	10
Word Recognition	10
Total	31

2.2. Standard 6 English Assessment

The 2008 standard 6 English instrument was the same as the one administered in 2007. Unlike most high-stake statewide or nationwide assessments, which usually employ different test items across years and conduct test scaling/equating to ensure the comparability of different test forms, the instruments used in this project are low-stake tools to investigate the program impact. Based on the fact that the psychometric properties of the 2007 standard 6 English instrument are considered as good and stable, it is cost-effective to use the 2007 standard 6 English assessment in 2008. Additionally, to avoid the possibility that classroom teachers in 2007 memorized the test items and coached the cohort 2008 standard 6 pupils on the items, the test administration in 2007 was conducted in absence of classroom teachers. All the blank 2007 standard 6 English and mathematics booklets that remained during the pupil assessment were burned following the administration. This was also true for 2008 pupil assessment materials. All the written 2007 standard 6 English test booklets have been kept in a locked room at the PSSP office and only authorized project staff has access to the materials.

The 2007/2008 standard 6 English instrument includes two content domains*: reading* and *language structure*. In the assessment of reading, pupils were presented with several short reading selections, including narrative and non-narrative texts, and for each answered 2 to 4 questions requiring them to recall explicitly stated information in the text, to make an inference about something they read in a text, or to integrate ideas across a text to arrive at a conclusion or identify a referent item and its reference in text. Items assessing language structure included those in which pupils had to identify the appropriate spelling of a word, identify the appropriate possessive adjective, form an adverb from an adjective, and write the appropriate verb tense to complete a sentence.

In the 2007/2008 standard 6 English instrument, items are also categorized by their cognitive demands, that is, what they ask pupils to do with the content. These demands have varying

degrees of complexity--*basic, moderate,* to *high*. Items classified as "basic" typically ask pupils to produce factual knowledge about language structure or, when reading a text, to locate explicitly stated information in the text. Items classified as "moderate" make more demands upon pupils such as asking them to identify appropriate verb tenses for given sentences, or to make straightforward inferences based on what they have read in a text. Items classified as "high" include those that require pupils to apply knowledge of conjunctions to form or judge the correctness of sentences or integrating or connecting ideas across a text.

Table 2-2 presents the distribution of English items across content domains and different cognitive skill levels. Appendix A documents the content domain and cognitive level for each item. In regards to the item types, the 2007/2008 standard 6 English assessment is composed of two item types: 23 multiple choice items and 17 short-constructed (fill-in-blank) items.

Table 2-2 Number of Items for the 2007/2008 Standard 6 English Assessment

	Basic Complexity	Moderate Complexity	High Complexity	Total
Reading Comprehension	14	6	4	24 (60%)
Language Structure & Use	8	6	2	16 (40%)
Total	22 (55%)	12 (30%)	6 (15%)	40

2.3. Standard 6 Mathematics Assessment

Because five of the 2007 standard 6 mathematics items possessed marginally acceptable psychometrical properties, they were replaced with either 2006 test items or 2007 pilot items with better psychometric properties. The item difficulty and discrimination index (point-biserial) of the original and replacement items are listed in Appendix B.

The 2008 standard 6 mathematics instrument consists of four content domains and three cognitive categories. The *Numbers and Operations* domain was divided into two sub-domains: *Whole Number* and *Fraction/Decimal/Ratio*. The two sub-domains include test items that require pupils to do pure computation and to solve word problems involving computation with different operations. The *Geometry and Data* domain includes test items that require pupils to identify shapes, compare the degrees of angles, and read pictographs and determine the number of objects represented. The *Measurement* domain consists of test items that ask pupils to compute numbers in units of mass, volume, and time.

The cognitive levels of test items are classified as *knowledge*, *comprehension*, or *application*. These cognitive classifications reflect that pupils are being asked to demonstrate knowledge or comprehension of the materials, or to apply what they know and understand.[1]

Table 2-3 presents the distribution of mathematics items across content domains and different cognitive skill levels. Appendix A documents the content domain and cognitive level for each item.

[1] Adapted from Bloom, C. S. ed. (1956). *Taxonomy of educational objectives. The classification of educational goals: Handbook I, cognitive domain*. New York: David MacKay &Co.

Similar to the English assessment, the 2008 standard 6 mathematics assessment has a mix of 29 multiple choice items and 11 short-constructed (fill-in-blank) items.

Table 2-3 Number of Items for the 2008 Standard 6 Mathematics Assessment

	Knowledge	Comprehension	Application	Total
Numbers & Operations				
Whole Number	4	5	5	14 (35%)
Fraction/Decimal/Ratio	3	6	3	12 (30%)
Geometry & Data	2	3	2	7 (17.5%)
Measurement	3	2	2	7 (17.5%)
Total	12 (30%)	16 (40%)	12 (30%)	40

3. PRINTING MATERIALS

PSSP:SFP sought the services of a company to print the 30 page standard 6 assessment booklets. A reputable printing company was identified after consultations with three printers. Two different booklets were made for the standard 6 assessments, one with the English items first, the other with mathematics items first. This was to prevent test fatigue from skewing the results of a particular subject and to prevent possible cheating by having different books distributed to the pupils. Tests were numbered and materials were packed into envelopes for each school. The test administrator was also given test administrator manuals for the Chichewa assessment and the standard 6 assessments which included the script and guidelines for administering the assessments.

4. SAMPLING SCHOOLS AND PUPILS FOR 2008 TEST ADMINISTRATION

4.1. Intervention vs. Comparison

Ideally, in order to scientifically determine the effectiveness of an intervention, an experimental design, with a randomized control/comparison group, should be used. However, in the reality of social science, a quasi experimental design is often implemented as an alternative approach when possible external influences cannot be controlled. With the quasi experimental design, the group difference in observed variables at baseline is often a concern while comparing the follow-up data between groups. A statistical method called the analysis of covariance (ANCOVA) is thus used in this project to compare the follow-up group difference by statistically controlling the initial group difference.

Dedza district was selected as a comparison district for PSSP:SFP because of its similarities with Dowa district. Dowa and Dezda, particularly in the northern/western region, have similar cultural beliefs (i.e. Gulewankulu), and are conservative in similar ways. Dedza borders the capital, Lilongwe, as does Dowa, but they do not border each other, thus minimizing cross over effects. They have similar population density, school ratios, and other comparable indicators. Few other agencies are supporting Dedza schools, although more so than Dowa and access to schools is often difficult just like in Dowa. Dedza is economically relatively better off, but Dowa is the bottom of most measures and therefore most districts will be better off than Dowa.

4.2. Sampling Schools

The 13 zones within Dowa were subdivided further into clusters for project implementation purposes. A total of 59 clusters were developed with 2-5 schools per cluster. To ensure representation, one school per cluster was randomly selected to be in the intervention sample. For the comparison district, Dedza, 40 schools were randomly selected from zones in the north/western region that met the comparability criteria. The same schools that were sampled in 2006 were sampled in 2007 and 2008, with two exceptions noted later.

4.3. Sampling Pupils

Pupils were randomly selected from standards 1 and 6. For standard 1, 6 pupils (3 boys and 3 girls) were randomly selected in each school. These pupils were assessed at the school using a one-on-one administered assessment. For standard 6, thirty pupils in each school were also randomly selected from attendance registers. These pupils were assessed at the school using a group administered assessment. If the class was smaller than thirty pupils, all were included in the assessment. Sometimes the register indicated more than 30 pupils, however high absenteeism contributed to lower than desired sample sizes in a class. Gender was not a criteria in randomly selecting standard 1 pupils as the populations were nearly equal and the random selection would capture all pupils. The list of selected pupils was not disclosed to the teacher to prevent swapping pupils during the assessment, especially for standard 1 because this was a one-on-one assessment. Table 4-1 shows the sample sizes for the 2006, 2007, and 2008 test administrations for all instruments.

Table 4-1 Sample Size for Standard 1 Chichewa, Standard 6 English and Math Assessments, in 2006, 2007, and 2008

	2006 Baseline		2007 Follow-up		2008 Follow-up	
	# of School	# of Students	# of School	# of Students	# of School	# of Students
Standard 1 Chichewa						
Intervention	59	354	59	354	59	354
Comparison	40	240	40	240	40	240
Standard 6 English						
Intervention	59	1372	59	1616	59	1607
Comparison	40	1084	40	1082	40	1121
Standard 6 Math						
Intervention	59	1372	59	1616	59	1607
Comparison	40	1084	40	1082	40	1121

5. FOLLOW-UP DATA COLLECTION IN 2008

PSSP:SFP collected data on pupil performance in Chichewa, mathematics and English in all the selected 59 schools of Dowa and 40 schools in Dedza for the 2008 school session.[2] The collection took place in September 2008 at the start of term 3. All the PSSP:SFP zonal coordinators (ZOCs) were involved in data collection exercise. The data collection exercise started with a one-day training session. The training focused on how to sample pupils, conduct the one-on-one and the group administration assessments, classroom organization, test security, and how to deal with potential issues like cheating.

Notification had been made ahead of time to all schools and a schedule of schools distributed to data collectors. Upon arrival at the school, the ZOC met with the head teacher and started with the Chichewa assessment since standard 1 pupils leave earlier in the day. The test administrator identified a quiet place that had enough light and few distractions. To ensure that the pupils were concentrating, they sometimes had to set up the situation so that the child is facing away from visual distractions. The pupils were escorted out of the class by the teacher after the administrator called the name of the pupil to be assessed. The administrators spent a few minutes establishing rapport with the child to help him/her feel more comfortable. Approximately 30 minutes were allotted for assessing each of the 6 pupils in standard 1.

For standard 6, the ZOC used the standard 6 classroom. The administrator spaced the pupils far enough apart to minimize cheating and to allow room for monitoring. The ZOC distributed the assessment one at a time to each pupil, alternating the two forms. Pupils were allotted 90 minutes to take the test and given a 15 minute break between the two sections.

Each pupil that participated received a pencil. The standard 1 and 6 teachers and head teacher received a pen.

6. DATA ENTRY

A team of three data entry clerks was engaged to enter the pupil assessment data. All the data entry took place on site at the PSSP:SFP Mponela field office in order to effectively monitor and support the data entry process. Data were entered and cleaned using MS Excel. A checking system was programmed in Excel to only allow valid codes to be entered.

When data came back from the field, the data entry team checked and recorded receipt of all assessment booklets, complete or incomplete, to maintain test security. The team entered data from one school at a time and upon completing a school, the score sheets were put back in the envelope which was then marked as entered and filed in a secure location.

[2] With two exceptions, the same schools were used for each round of assessments (2006, 2007, 2008). Two schools, one from Chigudu zone, one from Nalunga zone were replaced because they no longer had standard 6 classes which were used in the PSSP: SFP assessment. These schools were replaced by a similar school with the same characteristics such as enrollment, staffing level and pupil teacher ratio. Chikuzo school was replaced with Mtethera school in 2007 while Katona was replaced with Kawomba in 2008 pupil assessment.

7. ANALYSIS AND RESULTS

This chapter presents results of the 2008 assessments and compares pupil performance in 2008 with pupil performance in 2006 and 2007. Performance on each instrument is reported for pupils in Dowa district (intervention) and Dedza district (comparison). Within each district/group, performance is reported by gender and OVC (Orphan and Vulnerable Children) status as well. For the standard 1 Chichewa literacy test, performance in each subtest is reported. Item level statistics for standard 6 assessments are presented in Appendix A.

For the standard 6 mathematics assessments, five of the test items used in 2007 were replaced in the 2008 forms. In order to maintain the comparability of the tests comprised of different test items, test equating and scaling were conducted. Three types of achievement data are presented when reporting standard 6 pupil performance: mean (average) raw scores, mean (average) scale scores, and the percentage of pupils reaching performance levels.

Raw Scores: Raw scores represent the number of score points earned; since each item is worth one point a raw score is the same as the number of items answered correctly. The mean raw scores presented in this chapter are the average raw scores across all learners overall or in a subgroup of the population. For the mathematics assessment, since the 2008 test forms are not identical to either 2006 or 2007 test forms, it is not meaningful to compare raw scores between 2006, 2007, and 2008.

Scale Scores: Since the 2007 and 2008 standard 6 English test forms are identical, the scale scores used in 2007 were used in 2008 to compare the student performance across years. For the standard 6 mathematics assessment, the 2008 test form was "equated" to the 2006 test form using item response theory (IRT) methodology so that scores for 2008 were put on the same scale ranging from 100 to 500 as scores for 2006 and 2007. This makes it possible to compare math performance in 2006, 2007, and 2008 based on scale scores. Appendix C contains a description of the equating and scaling procedures.

Performance Levels: Each scale was also divided into four levels of performance -- *minimal*, *need improvement, proficient,* and *advanced* -- based on raw score and scale score ranges. The percentages of pupils at each performance level for English and mathematics assessments are presented in this chapter.

For the standard 1 Chichewa literacy assessment, only raw scores and performance levels are reported to represent students' performance because the same instrument was used in 2006, 2007 and 2008. The performance levels for this assessment are *minimal, passing,* and *advanced.*

As stated in the Introduction chapter, the pupil assessments were designed to provide a measure of project impact. In order to scientifically determine the intervention effect, a pre-post/intervention-comparison quasi-experimental design at school level was used. The analysis of covariance (ANCOVA) was employed to compare follow-up scale scores of the intervention and comparison groups at *school* level for statistical significance, using the baseline scale scores as a covariate to partial out the initial group difference. A significance level of .05 was used. In addition to the overall group comparisons, a series of t-tests were also performed to examine the achievement gaps between genders and OVC statuses for 2006, 2007, and 2008, respectively.

This chapter is organized by the three assessments. Each assessment section contains the following results:

- Performance of pupils by group (intervention vs. comparison) – indication of program impact,
- Performance of pupils by gender within group,
- Performance of pupils by OVC status within group, and
- Performance levels, including
    - Percent of pupils at each performance level by group
    - Percent of pupils at each performance level by gender within group
    - Percent of pupils at each performance level by OVC status within group

7.1. Standard 1 Chichewa Literacy Assessment Results

7.1.1. Performance of Pupils by Group

The standard 1 Chichewa literacy assessment consists of four task domains and has a total of 31 possible score points. Because the same instrument was used in 2006, 2007, and 2008 scaling and test equating were not conducted for this particular instrument. Table 7-1 presents results in raw scores for pupils in the standard 1 Chichewa literacy assessment by group in 2006, 2007, and 2008. Adjusted means for 2007 and 2008, after taking into consideration the baseline difference are calculated and listed in Table 7-1 as well. The statistical analyses show that the intervention group consistently outperformed the comparison group in 2007 and 2008. The performance trend from 2006 to 2008 is evidently shown in Figure 7.1.

Table 7-2 presents results in raw scores in 2006, 2007, and 2008 and adjusted means for 2007 and 2008 in each task domain of the standard 1 Chichewa literacy assessment, by group. Again, the statistical analyses show that the intervention group performed significantly better than the comparison group in all the tasks for both follow-up years.

Table 7-1 Mean Raw Scores and Estimated Marginal Mean Scores for the Standard 1 Literacy Assessment, Overall, in 2006, 2007, and 2008

	Raw Score Mean		Adjusted Raw Score Mean*	
	Intervention	Comparison	Intervention	Comparison
2006 Baseline	9.31	9.29	-	-
2007 Follow-Up	11.09	7.50	11.08 ▲	7.51
2008 Follow-Up	14.90	7.09	14.89 ▲	7.09

* Adjusted raw score means were calculated to partial out the difference between intervention and comparison groups in baseline data collection to make the follow-up scores statistically comparable between the two groups.
▲Performance of the group is significantly higher than the other group in follow-up, at .05 level, controlling the mean difference in baseline.

Figure 7-1 Raw Score Mean for the Standard 1 Literacy Assessment, Overall, in 2006, 2007, and 2008

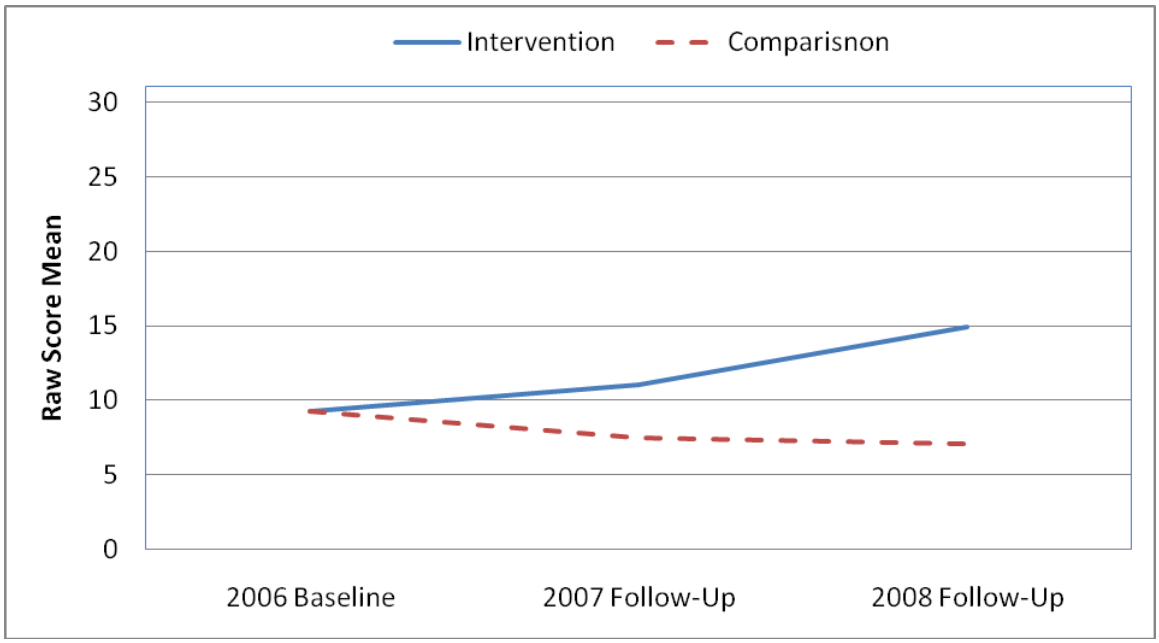


Table 7-2 Mean Raw Scores and Estimated Marginal Mean Scores for Each Task Domain of the Standard 1 Literacy Assessment, in 2006, 2007 and 2008

	Raw Score Mean		Adjusted Raw Score Mean*	
	Intervention	Comparison	Intervention	Comparison
Phonemic Awareness				
2006 Baseline	4.81	4.70	-	-
2007 Follow-Up	5.66	4.38	5.64 ▲	4.40
2008 Follow-Up	6.56	4.32	6.56 ▲	4.32
Word Naming				
2006 Baseline	1.31	1.21	-	-
2007 Follow-Up	1.66	1.05	1.64 ▲	1.08
2008 Follow-Up	2.17	0.85	2.16 ▲	0.85
Letter Sounds				
2006 Baseline	2.56	2.63	-	-
2007 Follow-Up	3.03	1.86	3.03 ▲	1.85
2008 Follow-Up	4.19	1.66	4.20 ▲	1.66
Word Recognition				
2006 Baseline	0.64	0.76	-	-
2007 Follow-Up	0.75	0.21	0.76 ▲	0.19
2008 Follow-Up	1.97	0.27	1.97 ▲	0.26

* Adjusted raw score means were calculated to partial out the difference between intervention and comparison group in baseline data collection to make the follow-up scores statistically comparable between the two groups.
▲Performance of the group is significantly higher than the other group in follow-up, at .05 level, controlling the mean difference in baseline.

7.1.2. Performance of Pupils by Gender within Group

Table 7-3 presents results in raw scores for pupils in the standard 1 Chichewa literacy assessment by gender within each group for three years. As shown in Table 7-3, it appears that both boys and girls in the intervention group performed better in Chichewa in 2007 and 2008 than in 2006, while both genders in the comparison group performed worse in 2007 and 2008 than in 2006. To examine whether achievement gaps between genders exist within each group, a series of t-tests were performed. The results show that there is no difference in Chichewa between genders in either group in 2006, 2007, and 2008.

Table 7-3 Mean Raw Scores for the Standard 1 Chichewa Literacy Assessment by Gender within Group, in 2006, 2007, and 2008

	Intervention				Comparison			
	Boy		Girl		Boy		Girl	
	n	Mean	n	Mean	n	Mean	n	Mean
2006 Baseline	168	9.20	186	9.42	124	9.10	116	9.49
2007 Follow-Up	176	11.14	178	11.04	122	7.74	118	7.25
2008 Follow-Up	180	14.76	174	15.03	121	7.51	119	6.66

7.1.3. Performance of Pupils by OVC Status within Group

Table 7-4 presents raw score results for the standard 1 Chichewa literacy assessment by OVC status within each group for three years. Within each group, a series of t-test were performed to examine whether there exists an achievement gap between the OVC pupils and non-OVC pupils in 2006, 2007, and 2008. The results show no statistically significant differences between OVC and non-OVC pupils in either group, in any year.

Table 7-4 Mean Raw Scores for the Standard 1 Chichewa Literacy Assessment by OVC Status within Group 2006, 2007, and 2008

	Intervention				Comparison			
	OVC		Non-OVC		OVC		Non-OVC	
	n	Mean	n	Mean	n	Mean	n	Mean
2006 Baseline	126	9.84	228	9.02	--	--	--	--
2007 Follow-Up	57	11.58	297	11.00	43	7.51	197	7.49
2008 Follow-Up	40	15.63	314	14.80	35	6.97	205	7.11

7.1.4. Performance Levels

For the standard 1 Chichewa literacy assessment, three performance levels were established: *Minimal, Passing,* and *Advanced*. The last two categories represent the passing levels where pupils demonstrate the satisfactory knowledge and skills required by the instrument. Figure 7-2 shows the raw score ranges corresponding to each level for the standard 1 Chichewa assessment in 2006, 2007, and 2008. Frequencies of raw scores for the 2008 Chichewa assessment are included in Appendix D.

Figure 7-2 Raw Score Ranges for the Standard 1 Chichewa Literacy Performance Levels, 2006, 2007, and 2008

	Raw Score Range
Advanced	18-31
Passing	12-17
Minimal	0-11

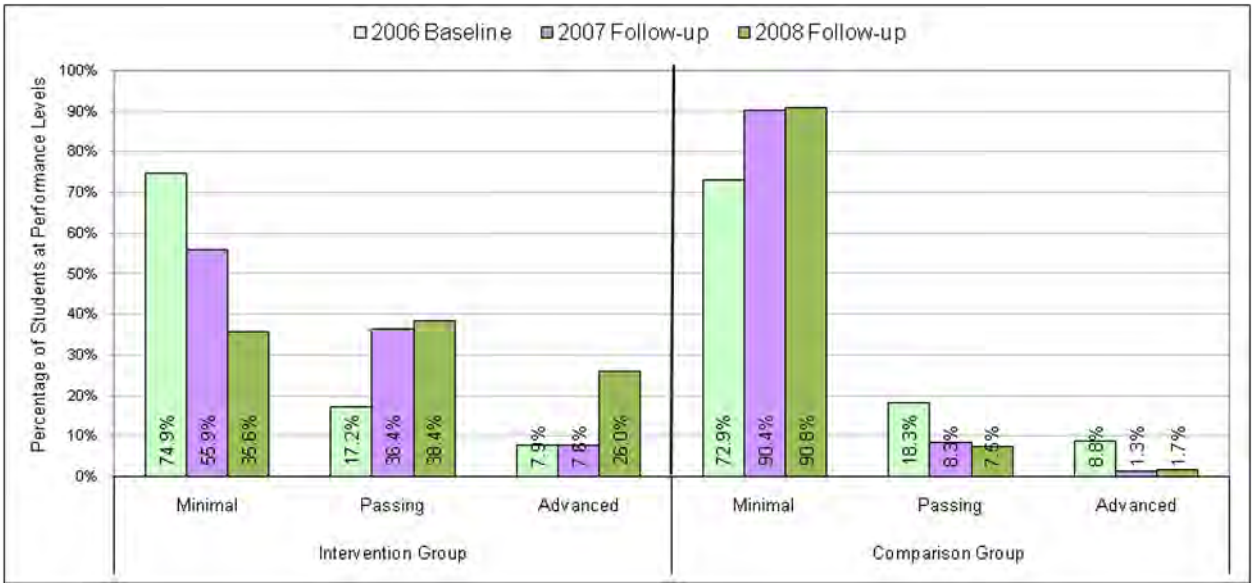
7.1.4.a Percent of Pupils at Each Performance Level by Group

Table 7-5 presents the percentage of pupils at each level for each group in 2006, 2007, and 2008. Figure 7-3 shows the corresponding graph. Based on the equivalent percentages between the two groups across the three levels at 2006 baseline, it appeared that there is no difference in Chichewa between the two groups at baseline. However, after one year of program implementation, the intervention group improved substantially compared to the comparison group. By 2008, the percentage of pupils categorized at *minimal* level decreased by 39% relative to baseline and the percentage of pupils in the *advanced* category increased 18%, while in the comparison group the percentage of pupils in the *minimal* category increased and the percentage of pupils in the *advanced* category decreased.

Table 7-5 Percentage of Standard 1 Pupils at Chichewa Literacy Performance Levels by Group in 2006, 2007 and 2008

	Minimal	Passing	Advanced
Intervention			
2006 Baseline	74.9	17.2	7.9
2007 Follow-up	55.9	36.4	7.6
2008 Follow-up	35.6	38.4	26.0
Comparison			
2006 Baseline	72.9	18.3	8.8
2007 Follow-up	90.4	8.3	1.3
2008 Follow-up	90.8	7.5	1.7

Figure 7-3 Percentage of Standard 1 Pupils at Chichewa Literacy Performance Levels by Group in 2006, 2007, and 2008



7.1.4.b Percent of Pupils at Each Performance Level by Gender within Group

Table 7-6 presents the percentage of pupils at each level for each gender within each group for three years. At 2006 baseline, girls in both groups seemed to perform slightly better than boys; while in the 2007 and 2008 follow ups, girls in the intervention steadily performed better, but both girls and boys in the comparison group regressed.

Table 7-6 Percentage of Standard 1 Pupils at Chichewa Literacy Performance Levels by Gender within Group: 2006, 2007, and 2008

	Minimal	Passing	Advanced
2006 Baseline			
Intervention			
Boy	75.0	16.1	8.9
Girl	74.7	18.3	7.0
Comparison			
Boy	75.0	16.1	8.9
Girl	70.7	20.7	8.6
2007 Follow-up			
Intervention			
Boy	59.1	33.0	8.0
Girl	52.8	39.9	7.3
Comparison			
Boy	88.5	9.8	1.6
Girl	92.4	6.8	0.8
2008 Follow-up			
Intervention			
Boy	37.2	38.3	24.4
Girl	33.9	38.5	27.6
Comparison			
Boy	88.4	9.9	1.7
Girl	93.3	5.0	1.7

7.1.4.c Percent of Pupils at Each Performance Level by OVC Status Within Group

Table 7-7 presents the percentage of pupils at each level by OVC status for three years. It appears that after the two years of program implementation, the OVC pupils in intervention schools improve their performance on Chichewa more than the OVC pupils in the comparison schools.

Table 7-7 Percentage of Standard 1 Pupils at Chichewa Literacy Performance Levels by OVC Status within Group: 2007 and 2008

	Minimal	Passing	Advanced
2006 Baseline			
Intervention			
OVC	69.0	26.2	4.8
Non-OVC	78.1	12.3	9.6
Comparison			
OVC	-	-	-
Non-OVC	-	-	-
2007 Follow-up			
Intervention			
OVC	49.1	45.6	5.3
Non-OVC	57.2	34.7	8.1
Comparison			
OVC	88.4	11.6	0.0
Non-OVC	90.9	7.6	1.5
2008 Follow-up			
Intervention			
OVC	37.5	30.0	32.5
Non-OVC	35.4	39.5	25.2
Comparison			
OVC	88.6	11.4	0.0
Non-OVC	91.2	6.8	2.0

7.2. Standard 6 English Assessment Results

7.2.1. Performance of Pupils by Group

The standard 6 English assessment has a total of 40 possible score points. Table 7-8 presents results in raw scores (RS) for pupils in the standard 6 English assessment, by group, for three years. The sample size is reported as well.

The scale scores were set to range from 100 to 500. Table 7-9 presents results in scale scores (SS), by group, for three years. As addressed in section 4.1, to evaluate the intervention impact, the group difference at follow-up needs to be adjusted to take into consideration the baseline difference. Adjusted scale score means for 2007 and 2008 are thus calculated and listed in Table 7.9. It appears that the pupils in both intervention and comparison groups improved their performance in English assessment; however, the intervention group seems to have more substantial improvement. The statistical analyses (i.e., ANCOVA) show that the intervention group performed significantly better than the comparison group in both 2007 and 2008. Figure 7-4 shows the corresponding line graph for pupil performance trend on the standard 6 English assessment across three years. It is evident that the line for comparison group is rather flat and that the line representing the intervention group is going up.

Table 7-8 Mean Raw Scores for the Standard 6 English Assessment, Overall, in 2006, 2007 and 2008

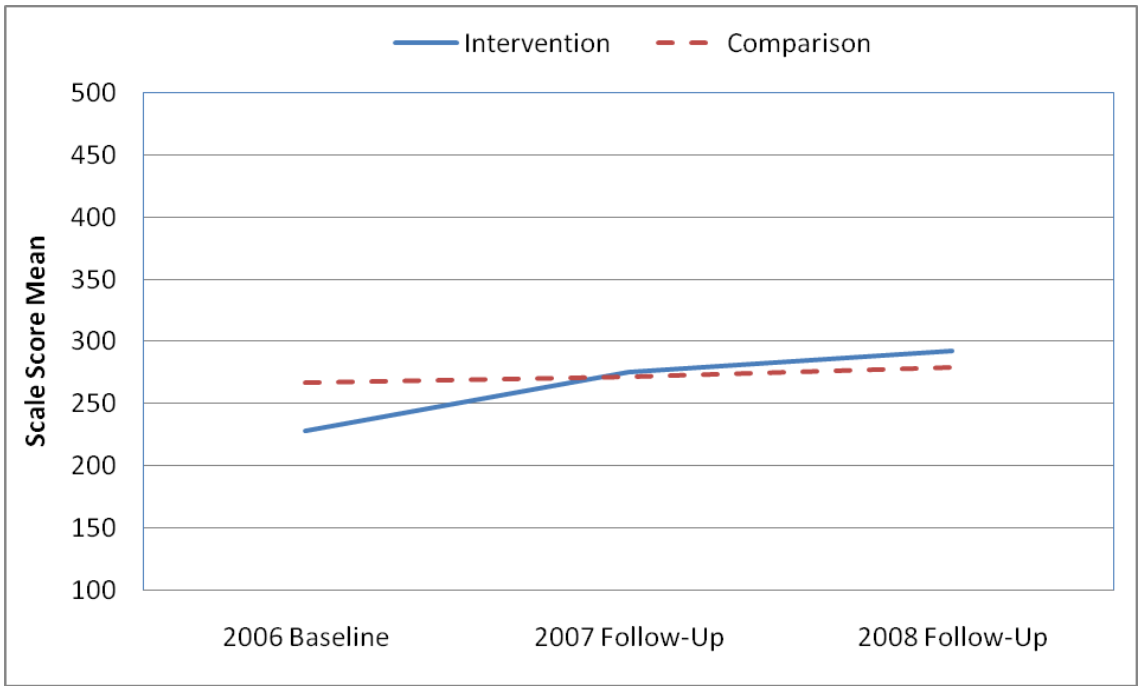
	Intervention		Comparison	
	n	Mean Raw Score	n	Mean Raw Score
2006 Baseline	1372	11.93	1084	14.27
2007 Follow-Up	1616	14.92	1082	14.48
2008 Follow-Up	1607	15.95	1121	15.02

Table 7-9 Mean Scale Scores and Estimated Marginal Mean Scores for the Standard 6 English Assessment, Overall, in 2006, 2007 and 2008

	Mean Scale Scores		Adjusted Raw Score Mean*	
	Intervention	Comparison	Intervention	Comparison
2006 Baseline	228.21	267.27	-	-
2007 Follow-Up	275.57	271.86	290.54 ▲	249.77
2008 Follow-Up	292.74	279.71	299.33 ▲	269.99

▲Performance of the group is significantly higher than the other group in 2007, at .05 level, controlling for the mean difference in 2006.

Figure 7-4 Scale Score Mean for the Standard 6 English, Overall, in 2006, 2007, and 2008



7.2.2. Performance of Pupils by Gender within Group

Table 7-10 present scale scores for standard 6 English assessment by gender within each group for three years. As shown in Table 7-10, it appears that both boys and girls in the intervention group performed better in 2007 and 2008 than in 2006, while in the comparison group boys slightly improved from 2006 to 2007 and 2008 and girls did not improve.

Also, in terms of an achievement gap between genders, it seems that boys in both groups performed better than girls across three data collection phases. To examine whether the achievement gaps between genders are statistically significant, a series of t-tests were performed. The results show the existence of achievement gaps between genders in both groups across the three years, except for the comparison group in 2006.

Table 7-10 Mean Scale Scores for the Standard 6 English Assessment by Gender within Group, in 2006, 2007 and 2008

	Intervention				Comparison			
	Boy		Girl		Boy		Girl	
	n	Mean	n	Mean	n	Mean	n	Mean
2006 Baseline	667	234.14 ▲	705	224.79	564	272.12	520	266.02
2007 Follow-Up	836	284.05 ▲	780	269.72	534	281.13 ▲	548	260.14
2008 Follow-Up	804	302.42 ▲	803	285.78	567	290.14 ▲	554	269.97

▲Performance of the group is significantly higher than the other gender group, at .05 level.

7.2.3. Performance of Pupils by OVC Status within Group

Table 7-11 presents scale scores for the standard 6 English assessment by OVC within each group in 2006, 2007, and 2008. The OVC information was only collected for the intervention group during the 2006 test administration. Within each group, a t-test was performed to examine whether there exists an achievement gap between the OVC pupils and non-OVC pupils across three years. The results show that there is no difference between OVC and non-OVC pupils in either group across three years.

Table 7-11 Mean Scale Scores for the Standard 6 English Assessment by OVC status within Group 2006, 2007 and 2008

	Intervention				Comparison			
	OVC		Non-OVC		OVC		Non-OVC	
	n	Mean	n	Mean	n	Mean	n	Mean
2006 Baseline	464	225.05	908	231.52	-	-	-	-
2007 Follow-Up	193	287.12	1423	275.78	165	270.43	917	270.51
2008 Follow-Up	223	297.44	1384	293.57	84	291.68	484	286.49

7.2.4. Performance Levels

For the standard 6 English assessment, four performance levels were established: *Minimal, Needs Improvement, Proficient,* and *Advanced*. The last two categories represent the passing levels where pupils demonstrate the satisfactory knowledge and skills required by the instrument. In this section, percentages of pupils at each performance level are presented. In the next section, 8.0 Implications, the percentages of pupils at passing and fail level are further summarized. Figure 7-5 shows the raw and scale score ranges corresponding to each level for the standard 6 English assessment in 2006, 2007, and 2008. Frequencies of raw scores and corresponding *thetas* and scale scores for the 2008 English assessment are included in Appendix C.

Figure 7-5 Raw Score and Scale Score Ranges for the Standard 6 English Performance Levels, 2007 and 2008

	2006 Baseline		2007/2008 Follow-up	
	Raw Score Range	Scale Score Range	Raw Score Range	Scale Score Range
Advanced	24 – 40	419 - 500	24 – 40	420 - 500
Proficient	16 – 23	300 – 404	16 – 23	300 – 404
Needs Improvement	10 – 15	200 – 285	10 – 15	200 – 285
Minimal	0 – 9	100 – 180	0 – 9	100 – 181

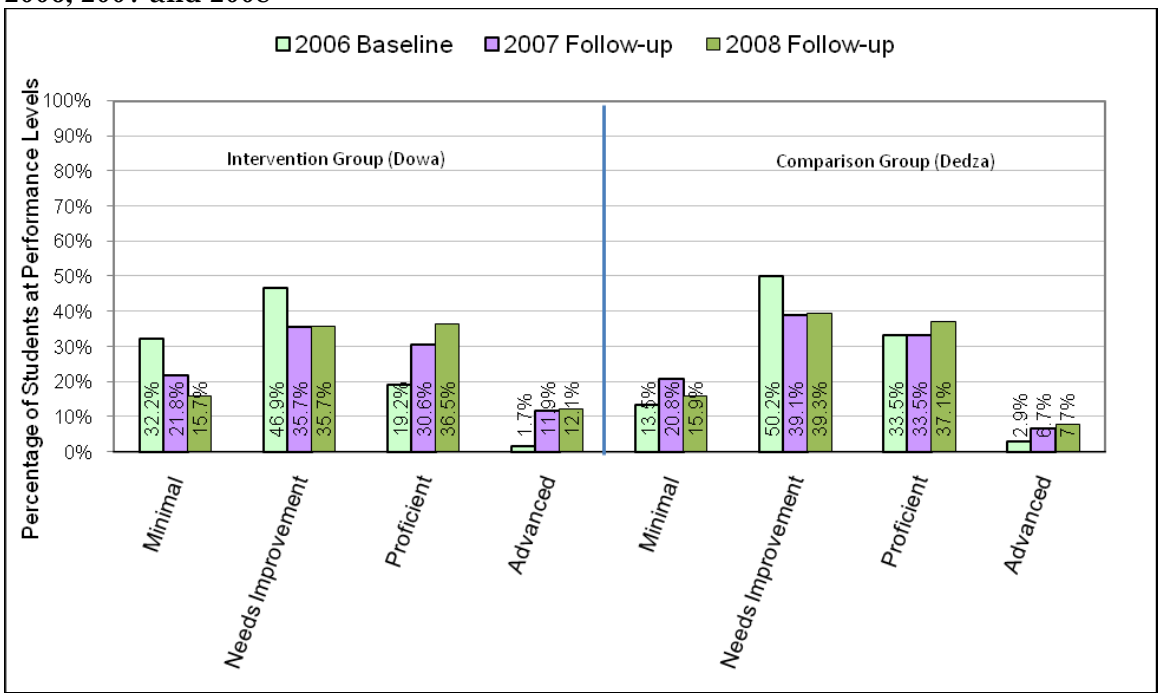
7.2.4.a Percent of Pupils at Each Performance Level by Group

Table 7-12 presents the percentage of pupils at each level for each group in 2006, 2007, and 2008. Figure 7-6 shows the corresponding graph. In 2008, approximately half (48.6%) of pupils in the intervention reached the proficient level or above, compared with 20.9% in 2006, representing a substantial improvement.

Table 7-12 Percentage of Standard 6 Pupils at English Performance Levels by Group in 2006, 2007 and 2008

	Minimal	Needs Improvement	Proficient	Advanced
Intervention				
2006 Baseline	32.2	46.9	19.2	1.7
2007 Follow-up	21.8	35.7	30.6	11.9
2008 Follow-up	15.7	35.7	36.5	12.1
Comparison				
2006 Baseline	13.5	50.2	33.5	2.9
2007 Follow-up	20.8	39.1	33.5	6.7
2008 Follow-up	15.9	39.3	37.1	7.7

Figure 7-6 Percentage of Standard 6 Pupils at English Performance Levels by Group in 2006, 2007 and 2008



7.2.4.b Percent of Pupils at Each Performance Level by Gender within Group

Table 7-13 presents the percentage of pupils at each level for each gender within each group in 2006, 2007, and 2008.

Table 7-13 Percentage of Standard 6 Pupils at English Performance Levels by Gender within Group: 2006, 2007 and 2008

	Minimal	Needs Improvement	Proficient	Advanced
2006 Baseline				
Intervention				
Boys	28.6	49.5	20.4	1.5
Girls	35.6	44.5	18.0	1.8
Comparison				
Boys	14.5	47.5	33.7	4.3
Girls	12.3	53.1	33.3	1.3
2007 Follow-up				
Intervention				
Boys	20.3	32.7	33.0	14.0
Girls	23.3	39.0	27.9	9.7
Comparison				
Boys	16.9	39.1	35.8	8.2
Girls	24.6	39.1	31.2	5.1
2008 Follow-up				
Intervention				
Boys	13.8	34.5	36.4	15.3
Girls	17.6	37.0	36.5	9.0
Comparison				
Boys	12.5	38.8	38.6	10.1
Girls	19.3	39.9	35.6	5.2

7.2.4.c Percent of Pupils at Each Performance Level by OVC Status within Group

Table 7-14 presents the percentage of pupils at each level by OVC status in 2006, 2007, and 2008.

Table 7-14 Percentage of Standard 6 Pupils at English Performance Levels by OVC Status within Group: 2006, 2007 and 2008

	Minimal	Needs Improvement	Proficient	Advanced
2006 Baseline				
Intervention				
OVC	32.2	46.9	19.6	1.1
Non-OVC	30.8	48.2	18.9	2.0
Comparison				
OVC	-	-	-	-
Non-OVC	-	-	-	-
2007 Follow-up				
Intervention				
OVC	20.7	30.6	34.7	14.0
Non-OVC	21.9	36.4	30.0	11.7
Comparison				
OVC	24.8	32.7	36.4	6.1
Non-OVC	20.1	40.2	32.9	6.8
2008 Follow-up				
Intervention				
OVC	13.5	35.0	39.9	11.7
Non-OVC	16.0	35.8	35.9	12.2
Comparison				
OVC	11.9	31.0	51.2	6.0
Non-OVC	14.3	37.0	40.1	8.7

7.3. Standard 6 Mathematics Assessment Results

7.3.1. Performance of Pupils by Group

The standard 6 math assessment has a total of 40 possible score points. Table 7-15 presents results in raw scores for pupils in the standard 6 math assessment by group for three years. The sample size associated with each estimated mean are reported as well. Because the items used for the three test administration phases were not identical, the 2007 and 2008 test forms were equated to the 2006 test form to create scale scores that are comparable across years. Hence, the comparison of pupil performance in standard 6 can only be conducted by using the scale scores, not raw scores.

The scale scores were set to range from 100 to 500. Table 7-16 presents results in scale scores by group for three years. Adjusted means for 2007 and 2008 are calculated and are also listed in the table. The statistical analyses show that the intervention group performed significantly better than the comparison group in both 2007 and 2008.

Table 7-15 Mean Raw Scores for the Standard 6 Math Assessment, Overall, in 2006, 2007 and 2008

	Intervention		Comparison	
	n	Mean RS	n	Mean RS
2006 Baseline	1372	12.93	1084	14.54
2007 Follow-Up	1616	17.73	1082	17.22
2008 Follow-Up	1607	18.98	1121	17.54

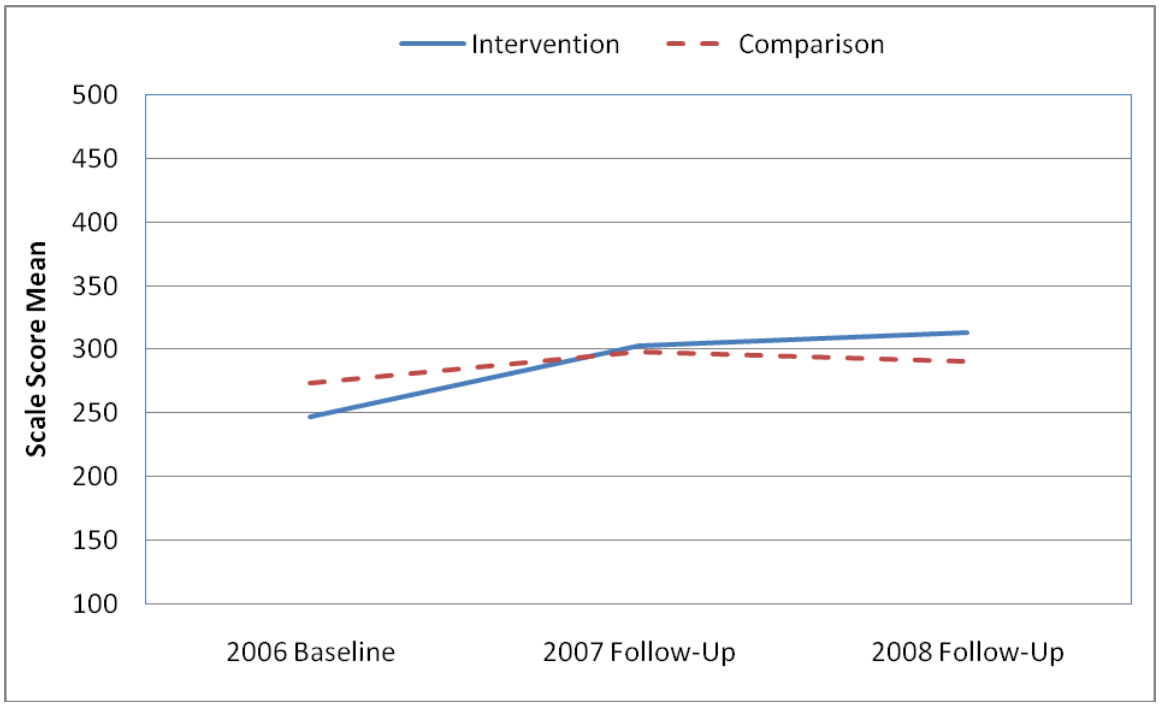
Table 7-16 Mean Scale Scores and Estimated Marginal Mean Scores for the Standard 6 Math Assessment, Overall, in 2006, 2007 and 2008

	Scale Scores		Adjusted Raw Score Mean*	
	Intervention	Comparison	Intervention	Comparison
2006 Baseline	246.73	273.68	-	-
2007 Follow-Up	302.97	297.73	309.16 ▲	288.61
2008 Follow-Up	313.33	290.56	314.74 ▲	288.48

▲Performance of the group is significantly higher than the other group in 2007 and 2008, at .05 level, controlling the mean difference in 2006.

Figure 7-7 shows the corresponding line graph for pupil performance trend on the standard 6 math assessment across three years.

Figure 7-7 Scale Score Mean for the Standard 6 English, Overall, in 2006, 2007, and 2008



7.3.2. Performance of Pupils by Gender within Group

Table 7-17 presents scale scores for the standard 6 math assessment by gender within each group for three years. It appears that both boys and girls in the intervention group steadily improved their math performance from 2006 to both 2007 and 2008, while in the comparison group both boys and girls improved only from 2006 to 2007.

In terms of an achievement gap between genders, it seems that boys in both groups performed better than girls across the three data collection phases. To examine whether the achievement gaps between genders are statistically significant, a series of t-tests were performed. The results show that the gaps in both groups are statistically significant across three years.

Table 7-17 Mean Scale Scores for the Standard 6 Math Assessment by Gender within Group, in 2006, 2007 and 2008

	Intervention				Comparison			
	Boy		Girl		Boy		Girl	
	n	Mean	n	Mean	n	Mean	n	Mean
2006 Baseline	667	256.93 ▲	705	239.10	564	282.15 ▲	520	265.25
2007 Follow-Up	836	322.65 ▲	780	283.78	534	316.39 ▲	548	276.84
2008 Follow-Up	804	325.15 ▲	803	300.66	567	304.51 ▲	554	276.87

▲Performance of the group is significantly higher than the other gender group, at .05 level.

7.3.3. Performance of Pupils by OVC Status within Group

Table 7-18 presents scale scores for pupils in the standard 6 math assessment by OVC status, within each group, for three years. Within each group, a t-test was performed to examine whether there exists an achievement gap between the OVC pupils and non-OVC pupils in 2006, 2007, and 2008. The results show no significant differences between OVC and non-OVC pupils in either group in 2006, 2007, and 2008.

Table 7-18 Mean Scale Scores for the Standard 6 Math Assessment by OVC status within Group, in 2006, 2007 and 2008

	Intervention				Comparison			
	OVC		Non-OVC		OVC		Non-OVC	
	n	Mean	n	Mean	n	Mean	n	Mean
2006 Baseline	464	249.56	908	246.85	-	-	-	-
2007 Follow-Up	193	299.78	1423	304.45	165	296.94	917	296.26
2008 Follow-Up	223	315.61	1384	312.48	84	301.42	484	294.04

7.3.4. Performance Levels

For the standard 6 math assessment, four performance levels were established: *Minimal, Needs Improvement, Proficient,* and *Advanced*. The last two categories represent the passing levels where pupils demonstrate the satisfactory knowledge and skills required by the instrument. Figure 7-8 shows the raw and scale score ranges corresponding to each level for the standard 6 math assessment in 2006, 2007, and 2008. Frequencies of raw scores and corresponding *thetas* and scale scores for the 2008 math assessment are included in Appendix C.

Figure 7-8 Raw Score and Scale Score Ranges for the Standard 6 English Performance Levels, 2006, 2007 and 2008

	2006 Baseline		2007 Follow-up		2008 Follow-up	
	Raw Score Range	Scale Score Range	Raw Score Range	Scale Score Range	Raw Score Range	Scale Score Range
Advanced	24 – 40	418 - 500	25 – 40	414 - 500	25 – 40	403 - 500
Proficient	16 – 23	300 – 403	17 – 24	296 – 399	18 – 24	300 - 388
Needs Improvement	10 – 15	200 – 285	11 – 16	200 – 281	12 – 17	207 - 285
Minimal	0 – 9	100 – 180	0 – 10	100 – 181	0 – 11	100 - 189

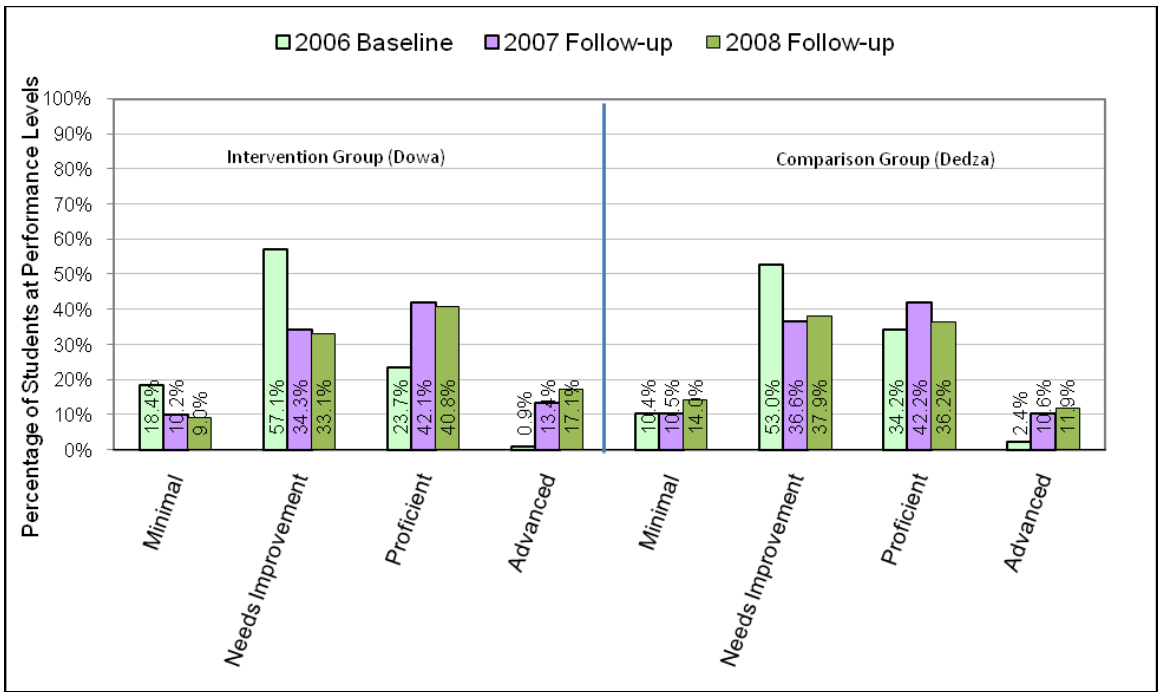
7.3.4.a Percent of Pupils at Each Performance Level by Group

Table 7-19 presents the percentage of pupils at each level for each group in 2006, 2007, and 2008. Figure 7-9 shows the corresponding graph. It appears that in the intervention group the percentage of pupils reaching the proficient level or above steadily increased from 2006 to 2007 and 2008, while in the comparison group the percentage of pupils reaching the same levels increased from 2006 to 2007, but decreased from 2007 to 2008.

Table 7-19 Percentage of Standard 6 Pupils at Math Performance Levels by Group in 2006, 2007 and 2008

	Minimal	Needs Improvement	Proficient	Advanced
Intervention				
2006 Baseline	18.4	57.1	23.7	0.9
2007 Follow-up	10.2	34.3	42.1	13.4
2008 Follow-up	9.0	33.1	40.8	17.1
Comparison				
2006 Baseline	10.4	53.0	34.2	2.4
2007 Follow-up	10.5	36.6	42.2	10.6
2008 Follow-up	14.0	37.9	36.2	11.9

Figure 7-9 Percentage of Standard 6 Pupils at Math Performance Levels by Group in 2006, 2007, and 2008



7.3.4.b Percent of Pupils at Each Performance Level by Gender within Group

Table 7-20 presents the percentage of pupils at each level for each gender, within each group, in 2006, 2007, and 2008.

Table 7-20 Percentage of Standard 6 Pupils at Math Performance Levels by Gender within Group: 2006, 2007 and 2008

	Minimal	Needs Improvement	Proficient	Advanced
2006 Baseline				
Intervention				
Boys	14.5	57.4	27.0	1.0
Girls	22.0	56.7	20.6	0.7
Comparison				
Boys	10.5	47.2	38.7	3.7
Girls	10.4	59.2	29.4	1.0
2007 Follow-up				
Intervention				
Boys	7.7	29.2	44.5	18.7
Girls	12.9	39.7	39.6	7.7
Comparison				
Boys	7.1	29.2	48.5	15.2
Girls	13.9	43.8	36.1	6.2
2008 Follow-up				
Intervention				
Boys	6.6	30.5	1.7	21.3
Girls	11.3	35.7	40.0	13.0
Comparison				
Boys	11.3	33.0	39.9	15.9
Girls	16.8	43.0	32.5	7.8

7.3.4.c Percent of Pupils at Each Performance Level by OVC Status within Group

Table 7-21 presents the percentage of pupils at each level by OVC status for three years.

Table 7-21 Percentage of Standard 6 Pupils at Math Performance Levels by OVC Status within Group: 2006, 2007, and 2008

	Minimal	Needs Improvement	Proficient	Advanced
2006 Baseline				
Intervention				
OVC	19.6	53.2	26.5	0.6
Non-OVC	17.7	59.0	22.2	1.0
Comparison				
OVC	-	-	-	-
Non-OVC	-	-	-	-
2007 Follow-up				
Intervention				
OVC	10.9	34.7	45.1	9.3
Non-OVC	10.1	34.2	41.7	13.9
Comparison				
OVC	10.3	39.4	39.4	10.9
Non-OVC	10.6	36.1	42.7	10.6
2008 Follow-up				
Intervention				
OVC	10.8	27.8	41.3	20.2
Non-OVC	8.7	34.0	40.8	16.6
Comparison				
OVC	10.7	39.3	31.0	19.0
Non-OVC	11.8	36.8	41.3	10.1

7.4. Item Statistics

Item statistics, including item difficulty, point biserial corrections (discrimination index), and the percentage selecting response options, are included in Appendix B. Also included are the topic and cognitive classifications for each item.

7.5. Test Reliabilities

Table 7-22 presents the reliability coefficients for the three instruments in 2006, 2007, and 2008. Reliability is the extent to which a test yields consistent scores. One commonly used measure of reliability is of internal consistency, which is measured as Cronbach's Alphas (based on inter-item correlations) and ranges from 0 (low) to 1 (high). Table 7-22 shows that the test reliabilities for the standard 6 instruments increased substantially from the 2006 to 2007 and 2008 test administrations. The test reliabilities for the standard 1 Chichewa assessment increased from 2007 to 2008. The reliability improvements are likely due to the better performance of pupils in 2007 and 2008, especially from the intervention group. Low reliability is often caused by measurement error due to pupil guessing. Because the students in 2007 and 2008 were able to better demonstrate their tested knowledge and skills (which reduced the amount of guessing) the instruments were more reliable.

Table 7-22 Reliability Coefficients for Standard 6 English and Mathematics Instruments and Standard 1 Chichewa Literacy Instrument for 2006, 2007, and 2008

	2006 Baseline	2007 Follow-up	2008 Follow-up
Standard 6 English	.66	.80	.78
Standard 6 Mathematics	.57	.75	.75
Standard 1 Chichewa literacy	.88	.83	.93

8. IMPLICATIONS

As previously discussed, the performance of the pupils in the intervention district has improved significantly. Standard 1 pupils show a 39.3% improvement in passing Chichewa since 2006 with girls and boys performing equally (see Tables 8-1 to 8-3). The extent of the improvement becomes more remarkable when compared with the 17.9% drop of the comparison district of Dedza. Between 2007 and 2008, pupil performance in Dedza remained stable, but represents a decline when compared to the baseline year of 2006. While the reasons for the decline are not known, district administration changes occurred in early 2007 that may have impacted teachers' performance at a critical juncture in the new curriculum reform effort rollout. Perhaps they did not receive the critical support and follow-up necessary for a successful implementation of a new curriculum.

In the impact district, however, teachers received further in-depth training and ongoing classroom monitoring and supervision from the project and district officials. The ongoing literacy campaign and more significantly, PSSP:SFP's literacy program, Beginning Literacy Program of Malawi (BLP/M) was launched, which strengthened teacher efforts and successfully focused on the building block of literacy at standard 1. BLP/M is a thematically based literacy course filled with Chichewa songs and stories for standard 1 learners. It mainly focuses on children's acquisition of basic literacy skills through reading and writing in Chichewa. The outcomes include enabling learners: to read short familiar messages with fluency; to write simple sentences and stories; and to love reading and writing. As these results show, BLP/M was successful at improving pupil's performance and has provided the foundation to enable lifelong learning.

In addition, resources such as notebooks and pens, which the pupils could not afford before were provided, and teachers used TALULAR more. Teacher use of participatory methods improved, with observations showing teacher use increasing from 30% in 2006 to 71% in 2008. Small grants helped spur infrastructural improvement, with every school engaged in some sort of infrastructure renovation or construction effort. Enrollment increased by 26%, with many of the youngest learners coming to school. This alone would be a challenge, but campaigns by communities to ensure attendance and engagement of communities in the learning process, helped learning remain a focus for these young learners. Thus the pupils' learning environment and opportunities were increased, resulting in their improved learning gains, including those for girls and OVC.

Table 8-1 Standard 1 Chichewa - Percentage of pupils passing the test

	Intervention	Comparison
2006		
Fail (Minimal)	74.9%	72.9%
Pass (Passing + Advanced)	25.1%	27.1%
2007		
Fail (Minimal)	55.9%	90.4%
Pass (Passing + Advanced)	44.1%	9.6%
2008		
Fail (Minimal)	35.6%	90.8%
Pass (Passing + Advanced)	64.4%	9.2%
2006 - 2007 Comparison		
Pass (Passing + Advanced)	**↑ 19.0%**	**↓ 17.5%**
2006 - 2008 Comparison		
Pass (Passing + Advanced)	**↑ 39.3%**	**↓ 17.9%**

Table 8-2 Standard 1 Chichewa - Percentage of pupils passing the test by gender

	Intervention		Comparison	
	Boy	Girl	Boy	Girl
2006				
Fail (Minimal)	75.0%	74.7%	75.0%	70.7%
Pass (Passing + Advanced)	25.0%	25.3%	25.0%	29.3%
2007				
Fail (Minimal)	59.1%	52.8%	88.5%	92.4%
Pass (Passing + Advanced)	40.9%	47.2%	11.4%	7.6%
2008				
Fail (Minimal)	37.2%	33.9%	88.4%	93.3%
Pass (Passing + Advanced)	62.8%	66.1%	11.6%	6.7%
2006 - 2007 Comparison				
Pass (Passing + Advanced)	**↑ 15.9%**	**↑ 21.9%**	**↓ 13.5%**	**↓ 21.7%**
2006 - 2008 Comparison				
Pass (Passing + Advanced)	**↑ 37.8%**	**↑ 40.8%**	**↓ 13.4%**	**↓ 22.6%**

Table 8-3 Standard 1 Chichewa - Percentage of pupils passing the test by OVC status

	Intervention		Comparison	
	OVC	Non-OVC	OVC	Non-OVC
2007				
Fail (Minimal)	49.1%	57.2%	88.4%	90.9%
Pass (Passing + Advanced)	50.9%	42.8%	11.6%	9.1%
2008				
Fail (Minimal)	37.5%	35.4%	88.6%	91.2%
Pass (Passing + Advanced)	62.5%	64.6%	11.4%	8.8%
2007 - 2008 Comparison				
Pass (Passing + Advanced)	**↑ 11.6%**	**↑ 21.8%**	**↓ 0.2%**	**↓ 0.3%**

For standard 6, pupils also improved in Dowa and significantly more than the comparison district. In English there was a 27.8% increase between baseline and 2008, and in mathematics, there was a 33.3% increase, with boys surpassing girls in both cases (see Tables 8-4 to 8-9).

Multiple PSSP:SFP interventions have contributed to this improvement, as PSSP:SFP is working to improve the entire education system. For example:

- Mobilization Corps of Malawi members (MCMs) have supported upper classes significantly through academic clubs, particularly in reading and mathematics. The MCMs themselves are role models in helping these older pupils see that education opens opportunity and offers hope for a brighter future.

- PSSP:SFP has provided donated books and locally written story books to school libraries and Teacher Development Centers (TDCs), increasing the resources available to children. The number of school libraries in Dowa has increased from 10 school accessible libraries at the beginning of the project to 174 facilities by the end of the project. These libraries bring direct access to myriad learning opportunities for children.

- Community mobilization campaigns are fostering a sense of importance for education, which is improving attendance, enrollment, time for learning and helping parents support their children in school.

- Child labor is increasingly recognized as an impediment to successful education and while it still plagues the girl child more than the boy, strides have been made.

- Teachers have been trained in various concepts in English and mathematics that have strengthened their own content knowledge and subsequent delivery of their lessons. PSSP:SFP has provided teaching and learning resources to assist teachers in these subjects and has helped teachers become their own best mentors and work together to improve their own delivery of these subjects through the decentralized mechanisms of teacher conferences, mobile teacher training troupes and weekly school-based continuous professional development (CPDs) sessions.

- A focus on assessment and remediation for learners in need has helped learners achieve.

These pupil assessment results prove that the PSSP:SFP holistic approach works. An entire system coming together to ensure that the child remains at the center and gets the right inputs in a supportive learning environment, at school and at home, works.

Table 8-4 Standard 6 - Percentage of pupils by proficiency level on English test

	Intervention	Comparison
2006		
Fail (Minimal + Needs Improvement)	79.1%	63.7%
Pass (Proficient + Advanced)	20.8%	36.3%
2007		
Fail (Minimal + Needs Improvement)	57.5%	59.9%
Pass (Proficient + Advanced)	42.5%	40.1%
2008		
Fail (Minimal + Needs Improvement)	51.4%	55.2%
Pass (Proficient + Advanced)	48.6%	44.8%
2006-2007 Comparison		
Pass (Proficient + Advanced)	**↑ 21.6%**	**↑ 3.8%**
2006-2008 Comparison		
Pass (Proficient + Advanced)	**↑ 27.8%**	**↑ 8.5%**

Table 8-5 Standard 6 - Percentage of pupils by proficiency level on English test by gender

	Intervention		Comparison	
	Boy	Girl	Boy	Girl
2006				
Fail (Minimal + Needs Improvement)	78.1%	80.1%	62.0%	65.4%
Pass (Proficient + Advanced)	21.9%	19.9%	38.0%	34.6%
2007				
Fail (Minimal + Needs Improvement)	53.0%	62.3%	56.0%	63.7%
Pass (Proficient + Advanced)	47.0%	37.7%	44.0%	36.3%
2008				
Fail (Minimal + Needs Improvement)	48.3%	54.6%	51.3%	59.2%
Pass (Proficient + Advanced)	51.7%	45.5%	48.7%	40.8%
2006-2007 Comparison				
Pass (Proficient + Advanced)	**↑ 25.1%**	**↑ 17.8%**	**↑ 6.0%**	**↑ 1.7%**
2006-2008 Comparison				
Pass (Proficient + Advanced)	**↑ 29.8%**	**↑ 25.6%**	**↑ 10.7%**	**↑ 6.2%**

Table 8-6 Standard 6 - Percentage of pupils by proficiency level on English test by OVC status

	Intervention		Comparison	
	OVC	Non-OVC	OVC	Non-OVC
2007				
Fail (Minimal + Needs Improvement)	51.3%	58.3%	57.5%	60.3%
Pass (Proficient + Advanced)	48.7%	41.7%	42.5%	39.7%
2008				
Fail (Minimal + Needs Improvement)	48.5%	51.8%	42.9%	51.3%
Pass (Proficient + Advanced)	51.6%	48.1%	57.2%	48.8%
2007-2008 Comparison				
Pass (Proficient + Advanced)	**↑ 2.9%**	**↑ 6.4%**	**↑ 14.7%**	**↑ 9.1%**

Table 8-7 Standard 6 - Percentage of pupils by proficiency level on Mathematics test

	Intervention	Comparison
2006		
Fail (Minimal + Needs Improvement)	75.5%	63.4%
Pass (Proficient + Advanced)	24.6%	36.6%
2007		
Fail (Minimal + Needs Improvement)	44.5%	47.1%
Pass (Proficient + Advanced)	55.5%	52.9%
2008		
Fail (Minimal + Needs Improvement)	42.1%	51.9%
Pass (Proficient + Advanced)	57.9%	48.1%
2006-2007 Comparison		
Pass (Proficient + Advanced)	**↑ 31.0%**	**↑ 16.3%**
2006-2008 Comparison		
Pass (Proficient + Advanced)	**↑ 33.3%**	**↑ 11.5%**

Table 8-8 Standard 6 - Percentage of pupils by proficiency level on Mathematics test by sex

	Intervention		Comparison	
	Boy	Girl	Boy	Girl
2006				
Fail (Minimal + Needs Improvement)	71.9%	78.7%	57.7%	69.6%
Pass (Proficient + Advanced)	28.0%	21.3%	42.4%	30.4%
2007				
Fail (Minimal + Needs Improvement)	36.9%	52.6%	36.3%	57.7%
Pass (Proficient + Advanced)	63.1%	47.4%	63.7%	42.3%
2008				
Fail (Minimal + Needs Improvement)	37.1%	47.0%	44.3%	59.8%
Pass (Proficient + Advanced)	63.0%	53.0%	55.8%	40.3%
2006-2007 Comparison				
Pass (Proficient + Advanced)	**↑ 35.0%**	**↑ 26.1%**	**↑ 21.4%**	**↑ 11.9%**
2006-2008 Comparison				
Pass (Proficient + Advanced)	**↑ 35.0%**	**↑ 31.7%**	**↑ 13.4%**	**↑ 9.9%**

Table 8-9 Standard 6 - Percentage of pupils by proficiency level on Mathematics test by OVC status

	Intervention		Comparison	
	OVC	Non-OVC	OVC	Non-OVC
2007				
Fail (Minimal + Needs Improvement)	45.6%	44.3%	49.7%	46.7%
Pass (Proficient + Advanced)	54.4%	55.7%	50.3%	53.3%
2008				
Fail (Minimal + Needs Improvement)	38.6%	42.7%	50.0%	48.6%
Pass (Proficient + Advanced)	61.5%	57.4%	50.0%	51.4%
2007-2008 Comparison				
Pass (Proficient + Advanced)	**↑ 7.1%**	**↑ 1.7%**	**↓ 0.3%**	**↓ 1.9%**

APPENDICES

APPENDIX A: ITEM STATISTICS

Tables A.1 and A.2 present item statistics for the standard 6 English and mathematics assessments, respectively. The content of the tables are as follows.

Topic/Content Domain

Each item is mapped to the standard 6 pupil syllabus for the subject are in terms of the content assessed.

Cognitive Categories

Each item has been classified by the cognitive skill involved.

Pct_0, Pct_1:

Used for constructed-response items only, each column indicates the percentage of pupils scoring at the particular score level, up to and including the maximum score level for the item. Not-reached items were excluded from the denominator for these calculations.

Pct_A, Pct_B, Pct_C, and Pct_D:

Used for multiple-choice items only, each column indicates the percentage of pupils choosing the particular response option for the item (A, B, C, or D). Not Reached items were excluded from the denominator for these calculations.

Pct_DA: Used for multiple-choice items only, this is the percentage of pupils that provided more than one response option for the same item. Not-reached items were excluded from the denominator for these calculations.

Pct_OM: This is the percentage of pupils who, having reached the item, did not provide a response. Not reached items were excluded from the denominator when calculating this statistic.

Pct_NR: This is the percentage of pupils that did not reach the item in their booklets. An item was coded as not reached when there was no evidence of a response to any subsequent items in the booklet and the response to the item preceding it was omitted.

Diff: Item difficulty is the percentage of pupils providing a fully correct response to the item. For the computation of this statistic, "Not Reached" items were treated as "Not Administered."

Disc: Discrimination is the correlation between a correct response to the item and the total score on all the items in the test booklets. For constructed-response items, the discrimination is the correlation between the number of score points and total score. Items exhibiting good measurement properties should have a moderately positive correlation.

Table A.1. Item Statistics for standard 6 English instrument, Overall: 2008 PSSP:SFP Baseline Data Collection

Item Seq	Topic/Content Domain	Cognitive Category	Pct_0	Pct_1	Pct_A	Pct_B	Pct_C	Pct_D	Pct_DA	Pct_OM	Pct_NR	Diff	Disc
1	Language Structure & Use	Basic			7.0	13.2	74.7	3.8	0.0	1.1	0.1	0.75	0.38
2	Language Structure & Use	Basic			36.0	38.2	11.2	12.0	0.1	2.4	0.1	0.36	0.32
3	Language Structure & Use	Basic			26.6	19.7	35.4	16.5	0.1	1.6	0.1	0.20	0.16
4	Language Structure & Use	Moderate			10.0	8.2	73.0	6.4	0.1	2.2	0.1	0.73	0.17
5	Language Structure & Use	High			17.0	12.0	58.9	10.3	0.2	1.5	0.1	0.59	0.38
6	Language Structure & Use	High			43.7	18.1	15.8	20.2	0.2	1.9	0.1	0.44	0.30
7	Language Structure & Use	Basic			36.8	30.5	19.2	11.1	0.3	2.0	0.1	0.37	0.18
8	Language Structure & Use	Moderate	86.8	11.0						2.1	0.1	0.11	0.32
9	Language Structure & Use	Moderate	89.1	8.1						2.7	0.1	0.08	0.30
10	Language Structure & Use	Moderate	92.9	4.4						2.6	0.1	0.04	0.25
11	Language Structure & Use	Moderate	86.9	10.4						2.6	0.1	0.10	0.28
12	Language Structure & Use	Moderate	90.8	5.9						3.2	0.1	0.06	0.24
13	Language Structure & Use	Basic	36.8	60.7						2.2	0.3	0.61	0.26
14	Language Structure & Use	Basic	47.0	50.8						2.0	0.3	0.51	0.21
15	Language Structure & Use	Basic	57.0	41.2						1.6	0.3	0.41	0.48
16	Language Structure & Use	Basic	44.2	53.5						2.1	0.3	0.53	0.24
17	Reading Comprehension	Moderate	48.2	42.8						8.7	0.3	0.43	0.51
18	Reading Comprehension	Basic			63.5	11.6	17.4	1.8	4.3	1.0	0.3	0.64	0.39
19	Reading Comprehension	Basic	42.6	49.1						8.0	0.3	0.49	0.56
20	Reading Comprehension	Basic			14.7	23.0	41.3	16.4	3.5	0.8	0.3	0.41	0.38
21	Reading Comprehension	Basic			57.6	19.1	12.8	9.3	0.3	0.5	0.3	0.58	0.41
22	Reading Comprehension	Basic			22.7	10.4	44.5	21.3	0.3	0.4	0.3	0.45	0.24
23	Reading Comprehension	Moderate			27.6	29.0	19.1	22.5	0.2	1.3	0.3	0.28	0.36
24	Reading Comprehension	Moderate			20.4	34.6	12.9	30.5	0.3	1.0	0.3	0.35	0.28
25	Reading Comprehension	Basic			14.2	10.7	25.7	48.4	0.2	0.4	0.3	0.48	0.44
26	Reading Comprehension	Basic			45.0	25.3	13.3	14.9	0.3	0.9	0.3	0.45	0.30
27	Reading Comprehension	High			23.0	31.6	22.6	20.9	0.2	1.4	0.3	0.32	0.20
28	Reading Comprehension	Basic	38.0	57.7						3.9	0.3	0.58	0.58
29	Reading Comprehension	Basic			16.3	29.1	16.2	35.9	1.8	0.3	0.4	0.36	0.31
30	Reading Comprehension	Moderate			12.7	13.9	55.0	17.3	0.2	0.6	0.4	0.55	0.34

Table A.1. Item Statistics for standard 6 English instrument, Overall: 2008 PSSP:SFP Baseline Data Collection – *continued*

Item Seq	Topic/Content Domain	Cognitive Category	Pct_0	Pct_1	Pct_A	Pct_B	Pct_C	Pct_D	Pct_DA	Pct_OM	Pct_NR	Diff	Disc
31	Reading Comprehension	High			46.1	18.4	25.2	8.8	0.2	0.9	0.4	0.09	0.18
32	Reading Comprehension	Basic	39.5	55.6						4.1	0.7	0.56	0.56
33	Reading Comprehension	Moderate			21.5	38.7	7.6	28.9	1.2	1.3	0.7	0.22	0.17
34	Reading Comprehension	High			25.8	42.0	15.6	14.1	0.1	1.6	0.7	0.42	0.02
35	Reading Comprehension	High			13.6	22.0	25.3	36.4	0.3	1.6	0.7	0.25	0.38
36	Reading Comprehension	Basic	71.3	24.8						3.1	0.8	0.25	0.48
37	Reading Comprehension	Basic	70.3	26.5						2.3	0.8	0.27	0.45
38	Reading Comprehension	Moderate			21.7	34.2	16.2	25.0	1.1	0.8	0.9	0.34	0.17
39	Reading Comprehension	Basic	54.9	42.5						0.1	2.5	0.42	0.36
40	Reading Comprehension	Basic	44.6	51.7							3.7	0.52	0.36

Table A.2. Item Statistics for standard 6 Mathematics instrument, Overall: 2008 PSSP:SFP Baseline Data Collection

Item Seq	Topic/Content Domain	Cognitive Category	Pct_0	Pct_1	Pct_A	Pct_B	Pct_C	Pct_D	Pct_DA	Pct_OM	Pct_NR	Diff	Disc
1	Number and Operations, WN	Knowledge			57.7	5.0	31.2	4.4	0.7	0.9	0.2	0.58	0.31
2	Number and Operations, WN	Knowledge			16.7	9.1	49.5	22.0	0.6	1.9	0.2	0.50	0.37
3	Number and Operations, WN	Knowledge			42.3	19.3	20.6	14.3	1.7	1.6	0.2	0.42	0.34
4	Number and Operations, WN	Knowledge			20.6	11.3	9.0	56.6	0.8	1.5	0.2	0.57	0.36
5	Geometry & Data	Knowledge			18.4	2.3	4.3	68.7	0.8	5.3	0.2	0.69	0.36
6	Geometry & Data	Knowledge			15.5	15.3	42.4	22.9	2.3	1.4	0.2	0.42	0.21
7	Measurement	Knowledge			13.1	14.4	10.1	60.9	0.4	0.9	0.2	0.61	0.31
8	Number and Operations, FDR	Knowledge			82.7	7.0	6.6	2.1	0.5	0.8	0.2	0.83	0.30
9	Number and Operations, FDR	Knowledge			16.8	35.2	12.9	33.7	0.3	0.9	0.2	0.35	0.21
10	Number and Operations, WN	Comprehension	38.8	60.4						0.6	0.2	0.60	0.38
11	Number and Operations, WN	Comprehension	14.8	84.8						0.2	0.3	0.85	0.24
12	Number and Operations, WN	Comprehension	25.7	73.9						0.1	0.3	0.74	0.47
13	Number and Operations, FDR	Comprehension	34.2	64.6						0.9	0.3	0.65	0.43
14	Number and Operations, FDR	Comprehension	42.0	57.3						0.4	0.3	0.57	0.46
15	Number and Operations, FDR	Comprehension	54.9	44.2						0.6	0.3	0.44	0.44
16	Number and Operations, WN	Comprehension	55.3	42.5						1.9	0.3	0.42	0.48
17	Number and Operations, FDR	Comprehension	74.3	23.4						2.0	0.3	0.23	0.41
18	Measurement	Knowledge			12.2	52.9	15.2	17.5	0.4	1.4	0.3	0.53	0.14
19	Measurement	Knowledge			37.8	24.0	19.8	16.2	0.0	1.8	0.3	0.38	0.23
20	Number and Operations, FDR	Comprehension			9.7	23.5	15.7	46.3	0.4	4.1	0.3	0.46	0.21
21	Number and Operations, FDR	Comprehension			23.9	12.5	42.1	17.1	0.3	3.8	0.3	0.24	0.11
22	Number and Operations, WN	Application			9.3	44.2	15.3	28.3	0.7	1.6	0.4	0.44	0.39
23	Number and Operations, WN	Application			17.8	16.6	39.9	23.2	0.3	1.8	0.4	0.40	0.48
24	Measurement	Comprehension	52.4	41.7						5.5	0.4	0.42	0.34
25	Number and Operations, FDR	Application			25.6	18.7	33.0	20.1	0.1	1.9	0.5	0.33	0.26
26	Geometry & Data	Comprehension			10.3	46.4	3.6	38.2	0.3	0.6	0.5	0.38	0.32
27	Number and Operations, FDR	Application			13.2	13.2	22.9	48.6	0.2	1.3	0.6	0.49	0.31
28	Number and Operations, WN	Application			14.6	11.4	16.3	54.5	0.3	2.1	0.8	0.55	0.19
29	Geometry & Data	Comprehension			11.6	38.2	21.8	25.5	0.5	1.6	0.8	0.38	0.19
30	Number and Operations, WN	Application			35.7	17.2	23.2	20.9	0.2	2.1	0.8	0.36	0.42

Table A.2. Item Statistics for standard 6 Mathematics instrument, Overall: 2008 PSSP:SFP Baseline Data Collection – *continued*

Item Seq	Topic/Content Domain	Cognitive Category	Pct_0	Pct_1	Pct_A	Pct_B	Pct_C	Pct_D	Pct_DA	Pct_OM	Pct_NR	Diff	Disc
31	Number and Operations, FDR	Application			21.2	22.0	24.5	29.9	0.3	1.1	0.8	0.25	0.09
32	Number and Operations, WN	Comprehension			29.4	31.5	14.0	20.9	0.9	2.5	0.9	0.29	0.34
33	Geometry & Data	Application			24.2	35.4	19.8	18.8	0.4	0.5	0.9	0.35	0.21
34	Number and Operations, FDR	Knowledge	16.6	66.3						16.1	0.9	0.66	0.32
35	Number and Operations, WN	Application			14.7	37.5	19.2	25.8	0.4	1.2	1.2	0.38	0.34
36	Measurement	Application			29.1	14.9	19.5	32.7	0.4	2.0	1.4	0.29	0.15
37	Geometry & Data	Comprehension			14.1	17.1	33.0	33.1	0.1	1.1	1.4	0.17	0.21
38	Geometry & Data	Application			9.7	30.8	34.1	22.2	0.6	1.1	1.5	0.31	0.28
39	Measurement	Comprehension	34.2	60.9						2.9	2.0	0.61	0.34
40	Measurement	Application			11.1	26.1	33.5	24.6	1.1		3.7	0.26	0.09

APPENDIX B: PSYCHOMETRIC PROPERTY OF THE FIVE ORIGINAL AND REPLACEMENT ITEMS IN 2008 STANDARD 6 MATHEMATICS ASSESSMENT

Item Location	Topic/Content Domain	Cognitive Category	Difficulty	Discrimination (point-biseral)
2007 Operational Test, #21 was replaced by 2006 Operational Test, #19	Number and Operations, FDR	Comprehension	.26	.14
			.29	.22
2007 Operational Test, #29 was replaced by 2006 Operational Test, #32	Geometry & Data	Comprehension	.19	.14
			.38	.21
2007 Operational Test, #37 was replaced by 2007 Pilot Test Form A, #29	Geometry & Data	Comprehension	.29	-.02
			.12	.16
2007 Operational Test, #38 was replaced by 2006 Pilot Test Form A, #40	Geometry & Data	Application	.24	.16
			.26	.21
2007 Operational Test, #40 was replaced by 2007 Pilot Test Form B, #40	Measurement	Application	.30	.09
			.26	.21

APPENDIX C: SCALING AND EQUATING METHODOLOGY, ITEM PARAMETERS, AND RAW SCORE-SCALE SCORE CONVERSION TABLES

Item Response Theory (IRT) was used to calibrate and scale the standard 6 mathematics instrument assessment. More specifically, the one-parameter Rasch model was employed. Winsteps statistical software package was used (Linacre, 2005). The steps taken to scale the data for each subject were as follows:

Step 1: Created a calibration data file transformed from SPSS format.

Step 2: Calibrated all the items with the Winstep program (version 3.57). The item difficulty (b) and ability parameter (θ) estimates were obtained.

Step 3: Compared the b-parameters for the linking items for 2006 and 2008, and computed the average difference between the b-parameters. This is the "equating constant".

Step 4: The scaled item parameters were used to establish the raw score to ability estimate (θ) conversion for reach raw score, through an iterative process. The equating constant was applied to the ability estimate to obtain adjusted ability estimates that are on the 2006 scale.

Step 5: The adjusted ability scores were transformed to scale scores ranging from 100 (lowest) to 500 (highest) by

$$\text{Scale Score} = \alpha + \gamma \bullet \text{Theta} \qquad \text{(Equation 1)}$$

where α is the y-intercept and γ is the slope.

The slope is 125.63 and the y-intercept is 358.39. Values of less than 100 or greater than 500 are truncated to those minimum and maximum scores.

The 2008 b-parameter estimates are shown in Table C.1.

The equating constant used to equate 2008 math assessment form with 2006 form is -.235065.

Table C.1. IRT Parameter Estimates (*b* parameters): 2008 PSSP Standard 6 Assessments

Item Sequence	Mathematics		
	Linking Item	2006	2008
1	Y	-0.9410	-.5272
2	Y	-0.5886	-.1624
3			.1630
4			-.4773
5	Y	-1.0570	-1.0577
6	Y	-0.5324	.1580
7	Y	-0.7990	-.6774
8	Y	-2.0787	-1.9071
9	Y	0.1590	.4921
10	Y	-0.7183	-.6518
11			-2.0702
12	Y	-1.5000	-1.3363
13	Y	-0.8223	-.8532
14			-.5122
15			.0768
16			.1530
17			1.1228
18	Y	-0.4190	-.3143
19			.3714
20			-.0170
21	Y	0.1676	1.0941
22	Y	-0.2469	.0735
23			.2723
24	Y	0.6684	.1898
25	Y	0.3002	.6019
26	Y	0.4897	.3507
27			-.1216
28			-.3865
29	Y	-0.2526	.3525
30			.4709
31			1.0572
32			.7880
33			.4832
34			-.9375
35			.3835
36			.7996
37			1.5495
38			.7152
39			-.6774
40			.9683

Appendix D: Frequency Tables

Table D.1. Frequency of Total Scores for Standard 1 Pupils by Group: Chichewa, 2008

Level	Raw Score	Intervention			Comparison		
		Frequency	%	Cum.%	Frequency	%	Cum.%
Minimal	0	-	-	-	2	0.8	0.8
	1	-	-	-	2	0.8	1.7
	2	3	0.8	0.8	14	5.8	7.5
	3	3	0.8	1.7	19	7.9	15.4
	4	1	0.3	2.0	25	10.4	25.8
	5	4	1.1	3.1	27	11.3	37.1
	6	5	1.4	4.5	35	14.6	51.7
	7	7	2.0	6.5	23	9.6	61.3
	8	24	6.8	13.3	19	7.9	69.2
	9	20	5.6	18.9	20	8.3	77.5
	10	26	7.3	26.3	17	7.1	84.6
	11	33	9.3	35.6	15	6.3	90.8
Passing	12	20	5.6	41.2	9	3.8	94.6
	13	30	8.5	49.7	4	1.7	96.3
	14	31	8.8	58.5	3	1.3	97.5
	15	26	7.3	65.8	1	0.4	97.9
	16	14	4.0	69.8	0	0.0	97.9
	17	15	4.2	74.0	1	0.4	98.3
Advanced	18	13	3.7	77.7	0	0.0	98.3
	19	7	2.0	79.7	0	0.0	98.3
	20	13	3.7	83.3	1	0.4	98.8
	21	8	2.3	85.6	0	0.0	98.8
	22	2	0.6	86.2	0	0.0	98.8
	23	3	0.8	87.0	0	0.0	98.8
	24	2	0.6	87.6	0	0.0	98.8
	25	2	0.6	88.1	0	0.0	98.8
	26	3	0.8	89.0	1	0.4	99.2
	27	9	2.5	91.5	0	0.0	99.2
	28	6	1.7	93.2	0	0.0	99.2
	29	4	1.1	94.4	0	0.0	99.2
	30	4	1.1	95.5	1	0.4	99.6
	31	16	4.5	100.0	1	0.4	100.0

Table D.2. Frequency of Total Scores for Standard 1 Pupils by Group and Gender: Chichewa, 2008

F= Frequency; P = Percentage; CP = Cumulative Percentage

Level	Raw Score	Intervention						Comparison					
		Boys			Girls			Boys			Girls		
		F	P	CP	F	P	CP	F	P	CP	F	P	CP
Minimal	0	-	-	-	-	-	-	1	0.8	0.8	1	0.8	0.8
	1	-	-	-	-	-	-	1	0.8	1.7	1	0.8	1.7
	2	-	-	-	3	1.7	1.7	6	5.0	6.6	8	6.7	8.4
	3	2	1.1	1.1	1	0.6	2.3	9	7.4	14.0	10	8.4	16.8
	4	1	0.6	1.7	0	0.0	2.3	10	8.3	22.3	15	12.6	29.4
	5	1	0.6	2.2	3	1.7	4.0	10	8.3	30.6	17	14.3	43.7
	6	4	2.2	4.4	1	0.6	4.6	19	15.7	46.3	16	13.4	57.1
	7	4	2.2	6.7	3	1.7	6.3	10	8.3	54.5	13	10.9	68.1
	8	17	9.4	16.1	7	4.0	10.3	11	9.1	63.6	8	6.7	74.8
	9	11	6.1	22.2	9	5.2	15.5	12	9.9	73.6	8	6.7	81.5
	10	10	5.6	27.8	16	9.2	24.7	8	6.6	80.2	9	7.6	89.1
	11	17	9.4	37.2	16	9.2	33.9	10	8.3	88.4	5	4.2	93.3
Passing	12	8	4.4	41.7	12	6.9	40.8	6	5.0	93.4	3	2.5	95.8
	13	20	11.1	52.8	10	5.7	46.6	4	3.3	96.7	0	0.0	95.8
	14	12	6.7	59.4	19	10.9	57.5	2	1.7	98.3	1	0.8	96.6
	15	14	7.8	67.2	12	6.9	64.4	0	0.0	98.3	1	0.8	97.5
	16	6	3.3	70.6	8	4.6	69.0	0	0.0	98.3	0	0.0	97.5
	17	9	5.0	75.6	6	3.4	72.4	0	0.0	98.3	1	0.8	98.3
Advanced	18	5	2.8	78.3	8	4.6	77.0	0	0.0	98.3	0	0.0	98.3
	19	3	1.7	80.0	4	2.3	79.3	0	0.0	98.3	0	0.0	98.3
	20	4	2.2	82.2	9	5.2	84.5	0	0.0	98.3	1	0.8	99.2
	21	4	2.2	84.4	4	2.3	86.8	0	0.0	98.3	0	0.0	99.2
	22	1	0.6	85.0	1	0.6	87.4	0	0.0	98.3	0	0.0	99.2
	23	2	1.1	86.1	1	0.6	87.9	0	0.0	98.3	0	0.0	99.2
	24	1	0.6	86.7	1	0.6	88.5	0	0.0	98.3	0	0.0	99.2
	25	0	0.0	86.7	2	1.1	89.7	0	0.0	98.3	0	0.0	99.2
	26	3	1.7	88.3	0	0.0	89.7	1	0.8	99.2	0	0.0	99.2
	27	7	3.9	92.2	2	1.1	90.8	0	0.0	99.2	0	0.0	99.2
	28	5	2.8	95.0	1	0.6	91.4	0	0.0	99.2	0	0.0	99.2
	29	1	0.6	95.6	3	1.7	93.1	0	0.0	99.2	0	0.0	99.2
	30	2	1.1	96.7	2	1.1	94.3	0	0.0	99.2	1	0.8	100.0
	31	6	3.3	100.0	10	5.7	100.0	1	0.8	100.0	-	-	-

Table D.3. Frequency of Total Scores for Standard 1 Pupils by Group and OVC Status: Chichewa, 2008

F= Frequency; P = Percentage; CP = Cumulative Percentage

Level	Raw Score	Intervention						Comparison					
		OVC			Non-OVC			OVC			Non-OVC		
		F	P	CP	F	P	CP	F	P	CP	F	P	CP
Minimal	0	-	-	-	-	-	-	1	2.9	2.9	1	0.5	0.5
	1	-	-	-	-	-	-	0	0.0	2.9	2	1.0	1.5
	2	1	2.5	2.5	2	0.6	0.6	3	8.6	11.4	11	5.4	6.8
	3	0	0.0	2.5	3	1.0	1.6	3	8.6	20.0	16	7.8	14.6
	4	0	0.0	2.5	1	0.3	1.9	2	5.7	25.7	23	11.2	25.9
	5	0	0.0	2.5	4	1.3	3.2	5	14.3	40.0	22	10.7	36.6
	6	0	0.0	2.5	5	1.6	4.8	4	11.4	51.4	31	15.1	51.7
	7	1	2.5	5.0	6	1.9	6.7	3	8.6	60.0	20	9.8	61.5
	8	4	10	15.0	20	6.4	13.1	2	5.7	65.7	17	8.3	69.8
	9	2	5	20.0	18	5.7	18.8	2	5.7	71.4	18	8.8	78.5
	10	2	5	25.0	24	7.6	26.4	2	5.7	77.1	15	7.3	85.9
	11	5	12.5	37.5	28	8.9	35.4	4	11.4	88.6	11	5.4	91.2
Passing	12	1	2.5	40.0	19	6.1	41.4	2	5.7	94.3	7	3.4	94.6
	13	1	2.5	42.5	29	9.2	50.6	0	0.0	94.3	4	2.0	96.6
	14	6	15	57.5	25	8.0	58.6	1	2.9	97.1	2	1.0	97.6
	15	2	5	62.5	24	7.6	66.2	1	2.9	100.0	0	0.0	97.6
	16	1	2.5	65.0	13	4.1	70.4	-	-	-	0	0.0	97.6
	17	1	2.5	67.5	14	4.5	74.8	-	-	-	1	0.5	98.0
Advanced	18	1	2.5	70.0	12	3.8	78.7	-	-	-	0	0.0	98.0
	19	1	2.5	72.5	6	1.9	80.6	-	-	-	0	0.0	98.0
	20	2	5	77.5	11	3.5	84.1	-	-	-	1	0.5	98.5
	21	0	0.0	77.5	8	2.5	86.6	-	-	-	0	0.0	98.5
	22	0	0.0	77.5	2	0.6	87.3	-	-	-	0	0.0	98.5
	23	1	2.5	80.0	2	0.6	87.9	-	-	-	0	0.0	98.5
	24	1	2.5	82.5	1	0.3	88.2	-	-	-	0	0.0	98.5
	25	0	0.0	82.5	2	0.6	88.9	-	-	-	0	0.0	98.5
	26	2	5	87.5	1	0.3	89.2	-	-	-	1	0.5	99.0
	27	2	5	92.5	7	2.2	91.4	-	-	-	0	0.0	99.0
	28	1	2.5	95.0	5	1.6	93.0	-	-	-	0	0.0	99.0
	29	0	0.0	95.0	4	1.3	94.3	-	-	-	0	0.0	99.0
	30	1	2.5	97.5	3	1.0	95.2	-	-	-	1	0.5	99.5
	31	1	2.5	100	15	4.8	100.0	-	-	-	1	0.5	100.0

Table D.4. Frequency of Total Scores for Standard 6 Pupils by Group: English, 2008

Level	Raw Score	Scale Score	Intervention			Comparison		
			Frequency	%	Cum.%	Frequency	%	Cum.%
Minimal	0	100	-	-	-	2	0.2	0.2
	1	100	3	0.2	0.2	1	0.1	0.3
	2	100	4	0.2	0.4	0	0.0	0.3
	3	100	5	0.3	0.7	5	0.4	0.7
	4	100	10	0.6	1.4	8	0.7	1.4
	5	100	13	0.8	2.2	8	0.7	2.1
	6	111	49	3.0	5.2	25	2.2	4.4
	7	137	66	4.1	9.3	41	3.7	8.0
	8	160	39	2.4	11.8	48	4.3	12.3
	9	181	63	3.9	15.7	40	3.6	15.9
Needs Improvement	10	200	56	3.5	19.2	69	6.2	22.0
	11	219	49	3.0	22.2	73	6.5	28.5
	12	236	113	7.0	29.2	70	6.2	34.8
	13	253	113	7.0	36.3	81	7.2	42.0
	14	269	122	7.6	43.9	71	6.3	48.3
	15	285	121	7.5	51.4	77	6.9	55.2
Proficient	16	300	80	5.0	56.4	81	7.2	62.4
	17	315	97	6.0	62.4	73	6.5	69.0
	18	330	58	3.6	66.0	42	3.7	72.7
	19	345	83	5.2	71.2	67	6.0	78.7
	20	360	102	6.3	77.5	52	4.6	83.3
	21	374	52	3.2	80.8	31	2.8	86.1
	22	389	74	4.6	85.4	41	3.7	89.7
	23	404	40	2.5	87.9	29	2.6	92.3
Advanced	24	420	26	1.6	89.5	33	2.9	95.3
	25	435	46	2.9	92.3	15	1.3	96.6
	26	451	42	2.6	95.0	15	1.3	97.9
	27	468	38	2.4	97.3	11	1.0	98.9
	28	485	6	0.4	97.7	2	0.2	99.1
	29	500	11	0.7	98.4	4	0.4	99.5
	30	500	16	1.0	99.4	4	0.4	99.8
	31	500	4	0.2	99.6	1	0.1	99.9
	32	500	2	0.1	99.8	1	0.1	100.0
	33	500	2	0.1	99.9	-	-	-
	34	500	0	0.0	99.9	-	-	-
	35	500	1	0.1	99.9	-	-	-
	36	500	1	0.1	100.0	-	-	-
	37	500	-	-	-	-	-	-
	38	500	-	-	-	-	-	-
	39	500	-	-	-	-	-	-
	40	500	-	-	-	-	-	-

Table D.5. Frequency of Total Scores for Standard 6 Pupils by Group and Gender: English, 2008

F= Frequency; P = Percentage; CP = Cumulative Percentage

Level	Raw Score	Intervention						Comparison					
		Boys			Girls			Boys			Girls		
		F	P	CP	F	P	CP	F	P	CP	F	P	CP
Minimal	0	-	-	-	-	-	-	-	-	-	2	0.4	0.4
	1	3	0.4	0.4	-	-	-	1	0.2	0.2	0	0.0	0.4
	2	1	0.1	0.5	3	0.4	0.4	0	0.0	0.2	0	0.0	0.4
	3	3	0.4	0.9	2	0.2	0.6	2	0.4	0.5	3	0.5	0.9
	4	5	0.6	1.5	5	0.6	1.2	6	1.1	1.6	2	0.4	1.3
	5	7	0.9	2.4	6	0.7	2.0	3	0.5	2.1	5	0.9	2.2
	6	19	2.4	4.7	30	3.7	5.7	10	1.8	3.9	15	2.7	4.9
	7	32	4.0	8.7	34	4.2	10.0	19	3.4	7.2	22	4.0	8.8
	8	18	2.2	10.9	21	2.6	12.6	16	2.8	10.1	32	5.8	14.6
	9	23	2.9	13.8	40	5.0	17.6	14	2.5	12.5	26	4.7	19.3
Needs Improvement	10	31	3.9	17.7	25	3.1	20.7	39	6.9	19.4	30	5.4	24.7
	11	28	3.5	21.1	21	2.6	23.3	36	6.3	25.7	37	6.7	31.4
	12	47	5.8	27.0	66	8.2	31.5	35	6.2	31.9	35	6.3	37.7
	13	50	6.2	33.2	63	7.8	39.4	33	5.8	37.7	48	8.7	46.4
	14	67	8.3	41.5	55	6.8	46.2	38	6.7	44.4	33	6.0	52.3
	15	54	6.7	48.3	67	8.3	54.5	39	6.9	51.3	38	6.9	59.2
Proficient	16	44	5.5	53.7	36	4.5	59.0	35	6.2	57.5	46	8.3	67.5
	17	47	5.8	59.6	50	6.2	65.3	40	7.1	64.6	33	6.0	73.5
	18	25	3.1	62.7	33	4.1	69.4	21	3.7	68.3	21	3.8	77.3
	19	42	5.2	67.9	41	5.1	74.5	36	6.3	74.6	31	5.6	82.9
	20	52	6.5	74.4	50	6.2	80.7	26	4.6	79.2	26	4.7	87.5
	21	27	3.4	77.7	25	3.1	83.8	19	3.4	82.5	12	2.2	89.7
	22	36	4.5	82.2	38	4.7	88.5	25	4.4	86.9	16	2.9	92.6
	23	20	2.5	84.7	20	2.5	91.0	17	3.0	89.9	12	2.2	94.8
Advanced	24	13	1.6	86.3	13	1.6	92.7	22	3.9	93.8	11	2.0	96.8
	25	30	3.7	90.0	16	2.0	94.6	10	1.8	95.6	5	0.9	97.7
	26	23	2.9	92.9	19	2.4	97.0	10	1.8	97.4	5	0.9	98.6
	27	23	2.9	95.8	15	1.9	98.9	7	1.2	98.6	4	0.7	99.3
	28	5	0.6	96.4	1	0.1	99.0	1	0.2	98.8	1	0.2	99.5
	29	9	1.1	97.5	2	0.2	99.3	3	0.5	99.3	1	0.2	99.6
	30	10	1.2	98.8	6	0.7	100.0	3	0.5	99.8	1	0.2	99.8
	31	4	0.5	99.3	-	-	-	1	0.2	100.0	0	0.0	99.8
	32	2	0.2	99.5	-	-	-	-	-	-	1	0.2	100.0
	33	2	0.2	99.8	-	-	-	-	-	-	-	-	-
	34	0	0.0	99.8	-	-	-	-	-	-	-	-	-
	35	1	0.1	99.9	-	-	-	-	-	-	-	-	-
	36	1	0.1	100.0	-	-	-	-	-	-	-	-	-
	37	-	-	-	-	-	-	-	-	-	-	-	-
	38	-	-	-	-	-	-	-	-	-	-	-	-
	39	-	-	-	-	-	-	-	-	-	-	-	-
	40	-	-	-	-	-	-	-	-	-	-	-	-

Table D.6. Frequency of Total Scores for Standard 6 Pupils by Group and OVC Status: English, 2008

F= Frequency; P = Percentage; CP = Cumulative Percentage

Level	Raw Score	Intervention						Comparison					
		OVC			Non-OVC			OVC			Non-OVC		
		F	P	CP	F	P	CP	F	P	CP	F	P	CP
Minimal	0	-	-	-	-	-	-	-	-	-	-	-	-
	1	-	-	-	3	0.2	0.2	-	-	-	-	-	-
	2	1	0.4	0.4	3	0.2	0.4	-	-	-	-	-	-
	3	0	0.0	0.4	5	0.4	0.8	1	1.2	1.2	3	0.6	0.6
	4	1	0.4	0.9	9	0.7	1.4	0	0.0	1.2	2	0.4	1.0
	5	3	1.3	2.2	10	0.7	2.2	1	1.2	2.4	2	0.4	1.4
	6	3	1.3	3.6	46	3.3	5.5	1	1.2	3.6	11	2.3	3.7
	7	8	3.6	7.2	58	4.2	9.7	1	1.2	4.8	13	2.7	6.4
	8	4	1.8	9.0	35	2.5	12.2	5	6.0	10.7	27	5.6	12.0
	9	10	4.5	13.5	53	3.8	16.0	1	1.2	11.9	11	2.3	14.3
Needs Improvement	10	11	4.9	18.4	45	3.3	19.3	6	7.1	19.0	21	4.3	18.6
	11	4	1.8	20.2	45	3.3	22.5	6	7.1	26.2	34	7.0	25.6
	12	17	7.6	27.8	96	6.9	29.5	4	4.8	31.0	32	6.6	32.2
	13	14	6.3	34.1	99	7.2	36.6	3	3.6	34.5	25	5.2	37.4
	14	13	5.8	39.9	109	7.9	44.5	2	2.4	36.9	28	5.8	43.2
	15	19	8.5	48.4	102	7.4	51.9	5	6.0	42.9	39	8.1	51.2
Proficient	16	14	6.3	54.7	66	4.8	56.6	14	16.7	59.5	40	8.3	59.5
	17	19	8.5	63.2	78	5.6	62.3	5	6.0	65.5	38	7.9	67.4
	18	8	3.6	66.8	50	3.6	65.9	3	3.6	69.0	18	3.7	71.1
	19	18	8.1	74.9	65	4.7	70.6	6	7.1	76.2	32	6.6	77.7
	20	9	4.0	78.9	93	6.7	77.3	3	3.6	79.8	20	4.1	81.8
	21	6	2.7	81.6	46	3.3	80.6	4	4.8	84.5	13	2.7	84.5
	22	7	3.1	84.8	67	4.8	85.5	5	6.0	90.5	19	3.9	88.4
	23	8	3.6	88.3	32	2.3	87.8	3	3.6	94.0	14	2.9	91.3
Advanced	24	3	1.3	89.7	23	1.7	89.5	1	1.2	95.2	26	5.4	96.7
	25	8	3.6	93.3	38	2.7	92.2	0	0.0	95.2	1	0.2	96.9
	26	3	1.3	94.6	39	2.8	95.0	0	0.0	95.2	6	1.2	98.1
	27	5	2.2	96.9	33	2.4	97.4	3	3.6	98.8	4	0.8	99.0
	28	0	0.0	96.9	6	0.4	97.8	0	0.0	98.8	1	0.2	99.2
	29	3	1.3	98.2	8	0.6	98.4	0	0.0	98.8	0	0.0	99.2
	30	1	0.4	98.7	15	1.1	99.5	1	1.2	100.0	3	0.6	99.8
	31	1	0.4	99.1	3	0.2	99.7	-	-	-	0	0.0	99.8
	32	1	0.4	99.6	1	0.1	99.8	-	-	-	1	0.2	100.0
	33	1	0.4	100.0	1	0.1	99.9	-	-	-	-	-	-
	34	-	-	-	0	0.0	99.9	-	-	-	-	-	-
	35	-	-	-	1	0.1	99.9	-	-	-	-	-	-
	36	-	-	-	1	0.1	100.0	-	-	-	-	-	-
	37	-	-	-	-	-	-	-	-	-	-	-	-
	38	-	-	-	-	-	-	-	-	-	-	-	-
	39	-	-	-	-	-	-	-	-	-	-	-	-
	40	-	-	-	-	-	-	-	-	-	-	-	-

Table D.7. Frequency of Total Scores for Standard 6 Pupils by Group: Mathematics, 2008

Level	Raw Score	Scale Score	Intervention			Comparison		
			Frequency	%	Cum.%	Frequency	%	Cum.%
Minimal	0	100	4	0.2	0.2	1	0.1	0.1
	1	100	1	0.1	0.3	0	0.0	0.1
	2	100	0	0.0	0.3	3	0.3	0.4
	3	100	0	0.0	0.3	0	0.0	0.4
	4	100	1	0.1	0.4	3	0.3	0.6
	5	100	5	0.3	0.7	2	0.2	0.8
	6	100	6	0.4	1.1	4	0.4	1.2
	7	106	12	0.7	1.8	14	1.2	2.4
	8	130	21	1.3	3.1	21	1.9	4.3
	9	151	22	1.4	4.5	38	3.4	7.7
	10	170	28	1.7	6.2	33	2.9	10.6
	11	189	44	2.7	9.0	38	3.4	14.0
Needs Improvement	12	207	77	4.8	13.8	40	3.6	17.6
	13	223	56	3.5	17.2	60	5.4	22.9
	14	240	81	5.0	22.3	77	6.9	29.8
	15	255	118	7.3	29.6	87	7.8	37.6
	16	270	96	6.0	35.6	81	7.2	44.8
	17	285	104	6.5	42.1	80	7.1	51.9
Proficient	18	300	81	5.0	47.1	67	6.0	57.9
	19	315	80	5.0	52.1	81	7.2	65.1
	20	329	97	6.0	58.1	62	5.5	70.7
	21	344	137	8.5	66.6	61	5.4	76.1
	22	358	101	6.3	72.9	51	4.5	80.6
	23	373	94	5.8	78.8	48	4.3	84.9
	24	388	66	4.1	82.9	36	3.2	88.1
Advanced	25	403	54	3.4	86.2	26	2.3	90.5
	26	419	54	3.4	89.6	42	3.7	94.2
	27	435	48	3.0	92.6	20	1.8	96.0
	28	452	37	2.3	94.9	19	1.7	97.7
	29	469	27	1.7	96.6	14	1.2	98.9
	30	487	22	1.4	97.9	4	0.4	99.3
	31	500	18	1.1	99.1	4	0.4	99.6
	32	500	1	0.1	99.1	2	0.2	99.8
	33	500	4	0.2	99.4	0	0.0	99.8
	34	500	0	0.0	99.4	2	0.2	100.0
	35	500	6	0.4	99.8	-	-	-
	36	500	4	0.2	100.0	-	-	-
	37	500	-	-	-	-	-	-
	38	500	-	-	-	-	-	-
	39	500	-	-	-	-	-	-
	40	500	-	-	-	-	-	-

Table D.8. Frequency of Total Scores for Standard 6 Pupils by Group and Gender: Mathematics, 2008

F= Frequency; P = Percentage; CP = Cumulative Percentage

Level	Raw Score	Intervention						Comparison					
		Boys			Girls			Boys			Girls		
		F	P	CP	F	P	CP	F	P	CP	F	P	CP
Minimal	0	1	0.1	0.1	3	0.4	0.4	-	-	-	1	0.2	0.2
	1	1	0.1	0.2	0	0.0	0.4	-	-	-	0	0.0	0.2
	2	0	0.0	0.2	0	0.0	0.4	2	0.4	0.4	1	0.2	0.4
	3	0	0.0	0.2	0	0.0	0.4	0	0.0	0.4	0	0.0	0.4
	4	0	0.0	0.2	1	0.1	0.5	0	0.0	0.4	3	0.5	0.9
	5	3	0.4	0.6	2	0.2	0.7	1	0.2	0.5	1	0.2	1.1
	6	2	0.2	0.9	4	0.5	1.2	1	0.2	0.7	3	0.5	1.6
	7	6	0.7	1.6	6	0.7	2.0	6	1.1	1.8	8	1.4	3.1
	8	8	1.0	2.6	13	1.6	3.6	8	1.4	3.2	13	2.3	5.4
	9	8	1.0	3.6	14	1.7	5.4	15	2.6	5.8	23	4.2	9.6
	10	7	0.9	4.5	21	2.6	8.0	17	3.0	8.8	16	2.9	12.5
	11	17	2.1	6.6	27	3.4	11.3	14	2.5	11.3	24	4.3	16.8
Needs Improvement	12	34	4.2	10.8	43	5.4	16.7	18	3.2	14.5	22	4.0	20.8
	13	18	2.2	13.1	38	4.7	21.4	29	5.1	19.6	31	5.6	26.4
	14	46	5.7	18.8	35	4.4	25.8	29	5.1	24.7	48	8.7	35.0
	15	53	6.6	25.4	65	8.1	33.9	39	6.9	31.6	48	8.7	43.7
	16	41	5.1	30.5	55	6.8	40.7	35	6.2	37.7	46	8.3	52.0
	17	53	6.6	37.1	51	6.4	47.1	37	6.5	44.3	43	7.8	59.7
Proficient	18	32	4.0	41.0	49	6.1	53.2	36	6.3	50.6	31	5.6	65.3
	19	39	4.9	45.9	41	5.1	58.3	46	8.1	58.7	35	6.3	71.7
	20	53	6.6	52.5	44	5.5	63.8	34	6.0	64.7	28	5.1	76.7
	21	75	9.3	61.8	62	7.7	71.5	36	6.3	71.1	25	4.5	81.2
	22	47	5.8	67.7	54	6.7	78.2	23	4.1	75.1	28	5.1	86.3
	23	49	6.1	73.8	45	5.6	83.8	33	5.8	81.0	15	2.7	89.0
	24	40	5.0	78.7	26	3.2	87.0	18	3.2	84.1	18	3.2	92.2
Advanced	25	33	4.1	82.8	21	2.6	89.7	16	2.8	86.9	10	1.8	94.0
	26	30	3.7	86.6	24	3.0	92.7	28	4.9	91.9	14	2.5	96.6
	27	32	4.0	90.5	16	2.0	94.6	13	2.3	94.2	7	1.3	97.8
	28	24	3.0	93.5	13	1.6	96.3	14	2.5	96.6	5	0.9	98.7
	29	18	2.2	95.8	9	1.1	97.4	10	1.8	98.4	4	0.7	99.5
	30	13	1.6	97.4	9	1.1	98.5	4	0.7	99.1	0	0.0	99.5
	31	11	1.4	98.8	7	0.9	99.4	3	0.5	99.6	1	0.2	99.6
	32	1	0.1	98.9	0	0.0	99.4	1	0.2	99.8	1	0.2	99.8
	33	3	0.4	99.3	1	0.1	99.5	0	0.0	99.8	0	0.0	99.8
	34	0	0.0	99.3	0	0.0	99.5	1	0.2	100.0	1	0.2	100.0
	35	4	0.5	99.8	2	0.2	99.8	-	-	-	-	-	-
	36	2	0.2	100.0	2	0.2	100.0	-	-	-	-	-	-
	37	-	-	-	-	-	-	-	-	-	-	-	-
	38	-	-	-	-	-	-	-	-	-	-	-	-
	39	-	-	-	-	-	-	-	-	-	-	-	-
	40	-	-	-	-	-	-	-	-	-	-	-	-

Table D.9. Frequency of Total Scores for Standard 6 Pupils by Group and OVC Status: Mathematics, 2008

F= Frequency; P = Percentage; CP = Cumulative Percentage

Level	Raw Score	Intervention						Comparison					
		OVC			Non-OVC			OVC			Non-OVC		
		F	P	CP	F	P	CP	F	P	CP	F	P	CP
Minimal	0	1	0.4	0.4	3	0.2	0.2	-	-	-	-	-	-
	1	0	0.0	0.4	1	0.1	0.3	-	-	-	-	-	-
	2	0	0.0	0.4	0	0.0	0.3	-	-	-	3	0.6	0.6
	3	0	0.0	0.4	0	0.0	0.3	-	-	-	0	0.0	0.6
	4	0	0.0	0.4	1	0.1	0.4	-	-	-	2	0.4	1.0
	5	1	0.4	0.9	4	0.3	0.7	-	-	-	0	0.0	1.0
	6	1	0.4	1.3	5	0.4	1.0	-	-	-	2	0.4	1.4
	7	3	1.3	2.7	9	0.7	1.7	-	-	-	5	1.0	2.5
	8	3	1.3	4.0	18	1.3	3.0	1	1.2	1.2	12	2.5	5.0
	9	3	1.3	5.4	19	1.4	4.3	4	4.8	6.0	15	3.1	8.1
	10	5	2.2	7.6	23	1.7	6.0	1	1.2	7.1	8	1.7	9.7
	11	7	3.1	10.8	37	2.7	8.7	3	3.6	10.7	10	2.1	11.8
Needs Improvement	12	12	5.4	16.1	65	4.7	13.4	1	1.2	11.9	9	1.9	13.6
	13	2	0.9	17.0	54	3.9	17.3	6	7.1	19.0	23	4.8	18.4
	14	16	7.2	24.2	65	4.7	22.0	3	3.6	22.6	32	6.6	25.0
	15	10	4.5	28.7	108	7.8	29.8	10	11.9	34.5	42	8.7	33.7
	16	10	4.5	33.2	86	6.2	36.0	6	7.1	41.7	37	7.6	41.3
	17	12	5.4	38.6	92	6.6	42.6	7	8.3	50.0	35	7.2	48.6
Proficient	18	11	4.9	43.5	70	5.1	47.7	9	10.7	60.7	31	6.4	55.0
	19	10	4.5	48.0	70	5.1	52.7	4	4.8	65.5	45	9.3	64.3
	20	13	5.8	53.8	84	6.1	58.8	5	6.0	71.4	28	5.8	70.0
	21	21	9.4	63.2	116	8.4	67.2	1	1.2	72.6	34	7.0	77.1
	22	13	5.8	69.1	88	6.4	73.6	2	2.4	75.0	30	6.2	83.3
	23	16	7.2	76.2	78	5.6	79.2	3	3.6	78.6	19	3.9	87.2
	24	8	3.6	79.8	58	4.2	83.4	2	2.4	81.0	13	2.7	89.9
Advanced	25	11	4.9	84.8	43	3.1	86.5	6	7.1	88.1	6	1.2	91.1
	26	11	4.9	89.7	43	3.1	89.6	6	7.1	95.2	18	3.7	94.8
	27	9	4.0	93.7	39	2.8	92.4	0	0.0	95.2	7	1.4	96.3
	28	5	2.2	96.0	32	2.3	94.7	1	1.2	96.4	6	1.2	97.5
	29	2	0.9	96.9	25	1.8	96.5	0	0.0	96.4	10	2.1	99.6
	30	2	0.9	97.8	20	1.4	98.0	2	2.4	98.8	0	0.0	99.6
	31	4	1.8	99.6	14	1.0	99.0	1	1.2	100.0	1	0.2	99.8
	32	0	0.0	99.6	1	0.1	99.1	-	-	-	0	0.0	99.8
	33	0	0.0	99.6	4	0.3	99.3	-	-	-	0	0.0	99.8
	34	0	0.0	99.6	0	0.0	99.3	-	-	-	1	0.2	100.0
	35	0	0.0	99.6	6	0.4	99.8	-	-	-	-	-	-
	36	1	0.4	100.0	3	0.2	100.0	-	-	-	-	-	-
	37	-	-	-	-	-	-	-	-	-	-	-	-
	38	-	-	-	-	-	-	-	-	-	-	-	-
	39	-	-	-	-	-	-	-	-	-	-	-	-
	40	-	-	-	-	-	-	-	-	-	-	-	-