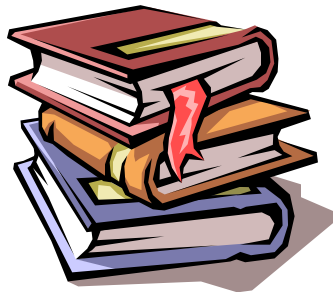


Republic Of Ghana
Ministry Of Education

Basic Education
Comprehensive Assessment System
(BECAS)

REPORT ON 2009 ADMINISTRATION OF
NATIONAL EDUCATION ASSESSMENT
PRIMARY 3 AND PRIMARY 6
English and Mathematics



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EXECUTIVE SUMMARY

The National Education Assessment (NEA), one of the indicators of Ghana's education quality at the basic level, is based on a random, stratified sample of pupils in Primary 3 and Primary 6. As a result of the design and sampling approach, NEA results can be generalized and compared by region, gender and type of school (public/private/project) classifications. The assessment measures pupils' performance in English and Mathematics and answers the questions, "Are pupils achieving a minimum competency or proficiency in English and Mathematics?" and "How are pupils performing in Mathematics and English as a whole on national basis?"

The NEA 2009 is the third in the series of assessments designed to measure one of Ghana's education quality indicators at the basic level. Against this backdrop, the analysis and data display in this report are intended to provide information to all stakeholders to make strategic choices for improving the performance of all pupils irrespective of their characteristics. The test results are also intended to provide a platform for dialogue and evidence-based data for improving instructional techniques, remedial instruction, teacher motivation and improved curriculum review. The findings of the NEA 2009 also provide to some extent, the basis for equitable allocation of resources – financial, human and material – and the adjustment in policy that might become necessary.

OBJECTIVES OF THE NEA 2009

The key objectives of the NEA 2009 are to:

- Determine the level of pupils' achievements in English and Mathematics at the pivotal stages of Primary 3 and Primary 6.
- Examine relationships between achievements and pupils' gender.
- Examine the pattern of performance in the components of English and Mathematics at Primary 3 and Primary 6.
- Compare the achievement of pupils in:
 1. English with that of Mathematics in the year 2009
 2. English and Mathematics in the year 2009 with performance in English and Mathematics in the years 2007 and 2005.

INSTRUMENTS

The methodology/process of designing NEA test items were strictly adhered to make comparison with previous years. The broad skill areas tested in NEA for P3 and P6 are as follow.

English

Listening
Usage (Grammatical Structure)
Reading Comprehension
Writing

Mathematics

Numbers and Numerals
Investigation with Numbers
Measurement
Shape and Space
Collecting and Handling Data

Sample

A sample of four hundred and forty-three (443) public schools with P3 and P6 classes was selected and tested in the 2009 administration of the NEA. The 443 primary schools represented a sampling fraction

of **3.5%** of all public primary schools in Ghana. The Sample Design Manager (SAMDEM), a sampling programme noted for its reliability, accuracy and cost-effectiveness was used for sampling. In addition, 140 Private schools and 100 Project schools were added to the sampled public schools, making a total of 683 schools.

TEST RESULTS

National Achievement Standards: Two cut-off scores were established to provide useful information regarding pupil performance and system effectiveness. The **Minimum-competency** describes pupils reaching 35% and the **Proficiency level** identifies those reaching 55% of the total score on the test. The 35% minimum-competency level was the collective judgment of item writers with support from other subject specialists and reflects 10% score points above the chance score of 25%, thereby suggesting some learning has taken place. The proficiency level of 55%, determined by the same group of educators, shows that the pupil has learned the curriculum for the class (grade level) to the degree necessary to work at the next grade level.

National Percentage Means: The national results of the NEA 2009 demonstrate that the performance of pupils was weak in both English and Mathematics in the two class/grade levels. The mean scores percent in English for P3 and P6 respectively were 40.2% and 48.2%. The mean scores percent in Mathematics for P3 and P6 respectively were 41.8% and 39.6%. The mean scores in Mathematics and English at both grade levels are above the chance score of 25% for a multiple-choice test with 4 options per item. However, the differences between the actual scores and chance score are quite small indicating that not much effort was put into answering the items correctly – possibly due to the low English and mathematical abilities of the pupils.

National Minimum-competency and Proficiency levels

Results from the NEA are presented below for 2005, 2007 and 2009 for ease of reference and to facilitate comparison for the three years.

Table 1: Overall Distribution Of Minimum-Competency And Proficiency NEA 05, 07 And 09

	Grade Levels, Subjects and % pupils reaching Minimum Competency (M-C) and Proficiency (Profi.) levels							
	PRIMARY 3				PRIMARY 6			
	ENGLISH		MATHEMATICS		ENGLISH		MATHEMATICS	
	M-C	Profi.	M-C	Profi.	M-C	Profi.	M-C	Profi.
2005	50.6	16.4	47.2	18.6	63.9	23.6	47.2	9.8
2007	50.2	15.0	42.6	14.6	69.7	26.1	46.2	10.8
2009	57.6	20.0	61.2	25.2	76.9	35.6	61.9	13.8

The percentages of pupils meeting the minimum-competency level were higher than those reaching the proficiency level in English and Mathematics in both P3 and P6. Although the percentages of pupils reaching the minimum competency and proficiency levels have increased in 2009, lower achievements were registered in 2007 and 2005.

National Gender Performance: In P3 English, the performance of girls is slightly higher than that of boys. The reverse is the case in P6 English. On minimum-competency and proficiency level attainment, more boys attained the minimum competency and proficiency levels in P3 English than girls.

In P6 English, a slightly higher percentage of boys reached the minimum competency than girls. The differences in performance between the boys and girls in English was not significant. However, boys outperformed girls significantly in Mathematics in P3 and P6.

National Performance by School Type: Private schools as usual outperformed the other types of schools followed by public schools and EQUALL project schools in that order.

REGIONAL RESULTS

P3 English Regional Performance: The highest mean score of 50.90% was achieved by pupils from the Greater Accra Region followed by the Western, Ashanti, Eastern and others. The Upper East Region had the lowest mean score of 32.89%. Greater Accra showed the greatest disparity in pupils' performance with a standard deviation of 20.9 while the Upper East Region displayed the least disparity in achievement with a standard deviation of 12.6.

P6 English Regional Performance: Again, the Greater Accra Region outperformed all the other regions with a mean score of 57.4% followed by the Volta, Eastern, Western, Ashanti and others. The lowest score was recorded for the Northern Region with a mean score of 39.4%

P3 Mathematics Regional Performance: Greater Accra outperformed the other Regions with a mean score of 48.9 %. The lowest regional mean score in P3 Mathematics was attained by the Upper East Region. Similarly, the highest percent of pupils reaching Minimum Competency and Proficiency levels were achieved by pupils in the Greater Accra Region.

P6 Mathematics Regional Performance: Again, Greater Accra topped the other Regions with a mean score of 44.8% while the lowest mean score in P6 mathematics was recorded in the Northern Region.

RECOMMENDATIONS

The following recommendations are based on the administration of the NEA 2009 and the test results in the hope that the issues raised would be addressed.

Mainstreaming of NEA and SEA Tests

National Assessment of Primary Education started in 1992 with the Criterion-Referenced Test (CRT). Ghana Basic Education Comprehensive Assessment System (Ghana BECAS) came in to replace the CRT in 2004. Unfortunately, the assessment system has no defined organizational structure at the Regional and District levels with adequately trained personnel to undertake the activity, thereby lacking skill transfer for sustainability. An organizational framework needs to be established with an Advisory Board in line with the National Council on Curriculum and Assessment (NACCA) to oversee the assessments at all levels.

Research

The performance of pupils on the NEA over the years; 2005, 2007 and 2009 portrays an inconsistent trend in some of the subjects. In some of the African countries, school-based data is collected in addition to the test data. Coupling research data to the test data provides more useful information to guide policy in terms of what is improving education quality and what is not. Future NEA should be allowed to undertake a similar process. In addition, other researches should be conducted to unearth processes and practices that improve teaching and learning in schools.

Meeting the Needs of the Assessment Services Unit (ASU)

ASU needs to be resourced with Land Line Telephone, Internet Connectivity and supported by personnel from the CRDD in the following areas: Subject Specialists in English and Mathematics, a Data Analyst, a Graphic Artist/Typist, Consultants and a cleaner. ASU staff also needs capacity building in various aspects of assessment.

Item Bank

An Item Bank needs to be established to facilitate test paper development to enable ASU cut down on the time spent on constructing new test items. Establishment of an item Bank will greatly help in meeting assessment time lines.

Funding Assessment Activities

Assessment is expensive and time bound. In 2009, most of the activities planned by ASU could not be executed on time because of delays in funding. The Ministry of Education and Ghana Education Service should set aside funds to support the assessment activities yearly since it is a critical activity that generates indicators for monitoring and evaluating the quality of primary education.

Pre-coding of Scannable Answer Sheets

Scannable answer sheets should be procured in time for pre-coding by TAs at their training sessions, prior to the actual administration of the tests.

Test Monitors

During the monitoring of the test administration, many schools as possible should be monitored.

Class Enrolments and Supply of Test Materials

Accurate enrolment figures for classes that take the NEA are essential for the allocation, packing and dispatch of test materials to the Test Administrators and schools. The Educational Information Management System (EMIS) should design a system to update school enrolments on a regular basis. This will help in obtaining reliable enrolment data for the delivery of adequate test materials to schools.

1.0 INTRODUCTION

Several international, regional, and national assessments report low and unequal learning outcomes in Basic Schools, reflecting the extent to which poor education quality is undermining the achievement of EFA. (EFA Report 2008) Assessment in itself does not improve the educational system. Assessments merely reflect what is going on within the system and provide information for evidence-based policy making and credible implementation strategies particularly when test data is coupled with school-based background information. In response to these concerns in general and to Ghana's ultimate goal of achieving high quality education, especially at basic level, the MOE/GES within the context of its strategic plan, has been measuring learning achievements prior to certification. In this direction Ghana's Basic Comprehensive Assessment System (BECAS), which consists of (1) National Education Assessment (NEA), (2) School Education Assessment (SEA) and (3) School-Based Assessment (SBA) or Continuous Assessment (CA) has been designed and administered to provide useful information that is clear and non-contradictory for improving educational planning, management and teaching and learning at the basic level.

The NEA, as an indicator of Ghana's education quality at the basic level, is administered to a random, stratified sample of pupils in P3 and P6. As a result of the design and sampling approach, NEA results can be generalized and compared by region, gender and type of school (public/private/project) classifications. The assessment measures pupils' performance in English and Mathematics and answers the questions, "Are pupils achieving a minimum competency or proficiency in English and Mathematics?" and "How are pupils performing in English and Mathematics as a whole on national basis?"

The 2009 NEA was the third in the series of assessments designed to measure education quality at the basic level. Against this backdrop, the analysis and data display in this report are intended to provide information to all stakeholders to make strategic choices for improving the performance of all pupils irrespective of their characteristics. The test results are also intended to provide a platform for dialogue and evidence-based data for improving instructional techniques, remedial instruction, teacher motivation and improved curriculum review. The findings of the NEA 2009 also provide to some extent, the basis for equitable allocation of resources – financial, human and material – and the adjustment in policy that might become necessary.

2.0 OBJECTIVES OF THE NEA 2009

The key objectives of the NEA 2009 are to:

- Determine the level of pupils' achievements in English and Mathematics at the pivotal stages of Primary 3 and Primary 6.
- Examine relationships between achievements and pupils' gender, regions and school type.
- Examine the pattern of performance in the components of English and Mathematics at Primary 3 and Primary 6.
- Compare the achievement of pupils in:
 - English with that of Mathematics in the year 2009
 - English and Mathematics (NEA 2009) with performance in English and Mathematics in 2007 and 2005.

3.0 INSTRUMENTS

The NEA 2009 consisted of multiple-choice test items designed for Primary 3 and Primary 6 in English and Mathematics. The test items were set by a Technical Working Group (TWG) composed of subject matter specialists in English and Mathematics in the Ghana Education Service, who work in the areas of curriculum development, textbook production, educational assessment and teacher education. The items were aligned to the national curriculum (English and Mathematics) to provide policy-level information regarding class achievement and system performance. Each test item was based on an objective of the English and Mathematics syllabuses.

The item pool used was subjected to a sensitivity review and pupils' opportunity to learn (OTL) in order to identify and remove items that, though theoretically and psychometrically sound, had properties that would introduce bias in performance. This reduced the risk of critics using poor items to demonstrate the weakness of the tests. The items were taken through all the stages of test development. These included piloting, item analysis, further review and revision. The tests were administered in August 2009 to a sample of schools/pupils from all the districts of the country. The answer sheets were scanned to capture test data. The data was cleaned for processing and analysis using Iteman software, Excel and SPSS. The breakdowns of items in each booklet are shown in Table 2.

Table 2: Distribution of Subtest Items in NEA 2009

ENGLISH		
SUBTEST	PRIMARY 3	PRIMARY 6
LISTENING	10	15
USAGE/ GRAMMATICAL STRUCTURE	17	20
READING COMPREHENSION	9	15
WRITING	4	10
MATHEMATICS		
SUBTEST	PRIMARY 3	PRIMARY 6
NUMBER & NUMERALS	15	27
INVESTIGATING WITH NUMBERS	13	7
SHAPE & SPACE	4	5
MEASUREMENT	5	13
COLLECTING & HANDLING DATA	3	8

The importance of the above stated broad areas or subtests assessed cannot be overemphasized. Competencies as well as proficiency in each of the skills (i.e. foundational literacy and numeracy) are necessary for improving the quality of teaching and learning. Measuring achievements of pupils in these subtests is necessary for informed decision- making in education delivery at these transitional stages of P3 and P6.

Four parallel test forms for English and Mathematics for P 3 and P 6 were administered in 2009. With the exception of Listening Comprehension, where only one form was used in each classroom, all the

four test forms were administered simultaneously in each class. The purpose of administering the four parallel test forms was to encourage independent work among pupils.

4.0 SELECTION OF SAMPLE

The administration of the NEA 2009 commenced with the selection of a sample of schools nationwide using the Sample Design Manager (SAMDEM)¹ programme. This software facilitates the random selection of national sample of schools and pupils/students. It uses a stratified two-stage cluster sample design, which is commonly used in educational research studies that are concerned with monitoring and evaluating the quality of education.

The sample size was 3.5% for primary 3 and 6 from all districts and regions in the country. All the streams in multiple schools were included in the sample to avoid biases. Similarly, intact classes (grade levels) were tested. The number of schools in the national sample was Seven hundred and Sixty-three (783). The figure consists of Public, Private, and EQUALL Project Schools. EQUALL Project School categories include Cohort I, Cohort II, Gait II and Breakthrough-To-Literacy (BTL) schools as shown in Table 3. Besides the Public schools which were selected by Samdem Software, the other school categories were selected using the SPSS. The inclusion of these Project Schools in the testing sample was to allow comparability of performance with the rest of the selected public and private schools, which were the target of this assessment. The regional distribution of schools and number of pupils expected and tested in P3 and P6 are shown in Table 3 to 6.

Table 3: Number Of Schools And Pupils Expected By Region

REGION	NO. OF SCHOOLS			NO. OF PUPILS EXPECTED							
				PRIMARY 3				PRIMARY 6			
	Public	Private	Project Schools	Public	Private	Project Schools	Total	Public	Private	Project Schools	Total
ASHANTI	75	33	19	4932	1300	811	7043	4310	777	1162	6249
B/AHAFO	48	11	6	2595	495	419	3509	2299	394	428	3121
CENTRAL	46	14	5	2933	480	204	3617	2626	429	168	3223
EASTERN	49	15	8	2684	391	529	3604	2430	420	446	3296
G/ACCRA	45	30	0	3181	927	0	4108	3138	836	0	3974
NORTHERN	48	04	8	3603	107	280	3990	3096	58	253	3407
U/EAST	24	01	3	1636	50	212	1898	1511	36	199	1746
U/WEST	19	01	7	1264	21	372	1657	1056	14	169	1239
VOLTA	40	15	35	2006	476	1230	3712	1855	511	1190	3556
WESTERN	49	16	9	3078	602	483	4163	2914	567	438	3919
TOTAL	443	140	100	27912	4849	4540	37301	25235	4042	4453	33730

¹ *Khadim Sylla, Mioko Saito and Kenneth N. Ross*

Table 4: Regional Distribution of Sampled EQUALL Project Schools

Project School	REGION									
	ASHANTI	BRONG AHAFO	CENTRAL	EASTERN	GT.ACCRA	NORTHERN	UPPER EAST	UPPER WEST	VOLTA	WESTERN
Cohort I	11	0	0	0	0	8	0	0	0	0
Cohort II	0	0	5	8	0	0	0	0	14	0
Gait II	8	6	0	0	0	0	3	7	0	9
BTL	0	0	0	0	0	0	0	0	21	0
Total	19	6	5	8	0	8	3	7	35	9

EQUALL Project schools

EQUALL Project schools are Public schools which have been selected from partner districts to implement the Breakthrough to Literacy (BTL)/Bridge to English (BTE) literacy programme. The BTL/BTE is a bilingual literacy programme which uses a combination of Ghanaian language and English language for instruction in P1, P2 and P3 classes. The programme has a set of teaching/learning materials and a nine-member District Teacher Support Team (DTST) in each partner district. The DTST members provide various levels of training to teachers and head teachers of the BTL/BTE schools annually. Cohort I and Cohort II schools constitute the first and second sets of schools selected to implement the BTL/BTE programme. The DTST members also provide an average of two school-based support visits to the schools a term.

GAIT II Schools

GAIT II is the acronym for Government Accountability Improves Trust. The goal of the GAIT II school programme is to improve the social and economic welfare of the population in partner districts through effective citizen participation in local governance and school management. The programme also aims at strengthening local government capacity to enable citizens increase ownership of district-level services. The GAIT II School programme is run in 700 schools spread over 25 districts. The GAIT II programme is funded by the USAID and implemented by the Cooperative League of USA (CLUSA) in partnership with the Education Development Centre (EDC) and the Institute of Local Government Studies (ILGS).

Table 5: Number of P3 Pupils Tested By Region

REGION	NO. OF PUPILS TESTED							
	PRIMARY 3							
	ENGLISH				MATHS			
	Public	Private	Project Schools	Total	Public	Private	Project Schools	Total
ASHANTI	3107	676	687	4470	2981	723	738	4442
BRONG AHAFO	2066	317	166	2549	1965	355	191	2511
CENTRAL	1949	352	169	2470	2049	346	218	2613
EASTERN	1888	234	465	2587	1854	236	501	2591
GREATER ACCRA	1909	630	0	2539	1964	571	0	2535
NORTHERN	2208	66	184	2458	1906	61	150	2117
UPPER EAST	1166	05	103	1274	1093	5	104	1202
UPPER WEST	881	05	323	1209	828	0	134	962
VOLTA	1446	430	1001	2877	1252	389	979	2620
WESTERN	2199	385	295	2879	2012	414	293	2719
TOTAL	18819	3100	3393	25312	17904	3100	3308	24312

Table 6: Number of P6 Pupils Tested By Region

REGION	NO. OF PUPILS TESTED							
	PRIMARY 6							
	ENGLISH				MATHS			
	Public	Private	Project Schools	Total	Public	Private	Project Schools	Total
ASHANTI	3007	550	699	4256	2798	586	724	4108
BRONG AHAFO	1859	354	148	2361	1739	375	169	2268
CENTRAL	1980	338	159	2477	1829	398	178	2405
EASTERN	2021	240	207	2468	1692	257	390	2341
GREATER ACCRA	2251	505	0	2756	1945	532	0	2477
NORTHERN	2055	54	171	2280	1668	89	183	1940
UPPER EAST	1001	14	89	1104	910	53	114	1076
UPPER WEST	779	11	127	917	713	31	113	857
VOLTA	1440	516	843	2799	1098	450	1,042	2590
WESTERN	2152	424	249	2825	2034	465	289	2788
TOTAL	18180	2909	2581	24243	16411	3238	3202	22851

Table 5 and 6 show that the number of pupils tested fell short of the number of pupils expected. Please See Section 5.2 of the report for the details

5.0 ADMINISTRATION OF NEA 2009

5.1 Training of Test Administrators

National Education Assessment involves a large number of test administrators. To improve training effectiveness the participants for the training workshop were divided into two groups. A four-day intensive training workshop was held at two venues for the test administrators. The first was at Bunso Cocoa College from 18 – 21st June 2009, for test administrators from Central, Eastern, Greater Accra, Volta and Western Regions. The second workshop was held from 22 -25th June 2009 at Opoku Ware Senior High School, Kumasi for Ashanti, Brong Ahafo, Northern, Upper East and Upper West Regions. In all, 485 test administrators were trained for the NEA and SEA tests.

The NEA 2005 Training Manual was used to train 485 Circuit Supervisors and Assistant Directors in charge of supervision of schools in the districts. For about 50% of the trainees, this was their first experience with test administration in a national assessment of this magnitude.

The topics covered during the training included test materials and procedures, use of Test Administrator's Manual, coding scheme, Pupil Identification Numbers, usage of test forms, subject codes, test material receipt forms, report forms and procedures for post-administration. At the time of the training session, the answer sheets had not been received by ASU BY THE SUPPLIERS FROM South Africa. Therefore, the pre-coding of answer sheets could not be done at the workshop. Workshop facilitators developed several practice-coding exercises to enable test administrators code all test materials effectively. This added to the success of the scanning and scoring activities later. Additionally, trainees participated in micro-administration activities using peer groups. This exercise enabled participants to practise the actual administration with experienced TAs and trainers who provided them with valuable feedback before administering the test in schools.

5.2 Administration and Monitoring

The 2009 NEA was administered together with SEA 2009. The combined administration of the two tests was to enable the use of the results for improving teaching and learning in schools in the ensuing year. Owing to the late arrival of scannable answer sheets from the suppliers in South Africa, the administration of the test which was to start from 28th July 2009 was rescheduled to start on 4th August 2009. Test materials reached some of the Districts when schools had gone on vacation. Although the pupils were called back to write the test on the new date, many of the pupils from both public and private schools could not turn up for the test. Monitoring reports showed that pupils and staff of some of the sampled public and private schools went on holidays and their pupils could not participate in the test. Thus, some of the sampled schools and pupils missed the test. This accounted for the reduction in the number of pupils expected and those who actually wrote the test. Notwithstanding the above mentioned challenges, the tests were successfully administered in the districts.

The tasks of coding the answer sheets with Pupil Identification Numbers (PINs), which included regional, district and school codes, along with Sex, Subject codes and Form Numbers were performed by the test administrators/pupils on the field before and during the administration of the tests.

The process of using a separate answer sheet for each subject and shading responses on the scannable answer sheets was not new to most P3 pupils since they took part in the School Education Assessment (SEA) in 2008. Errors were detected in P6 pupils shading because they did not have experience in using scannable answer sheets as compared to P3 pupils.

The Test Administrators worked in pairs generally, but in schools with double streams, four test administrators were assigned.

Monitoring Teams drawn from Regional Directorates and USAID Technical Support Team observed the test administration in all the ten regions. As many schools as possible were monitored. Monitors provided feedback in a variety of areas. Generally, the administration of the NEA tests was successful despite weather and timing problems. TA performance was seen as positive, for the most part.

5.3 Data Processing and Data Analysis

The NEA 2009 tests for P3 consisted of forty (40) multiple-choice items with four (4) alternative options each for English and Mathematics respectively. Similarly, for P6 the test consisted of sixty (60) multiple-choice items with (4) alternative options each for both subjects.

The scannable answer sheets retrieved from the regions were sorted by class, by subject and by region to facilitate processing and analysis. Initial data quality checks were conducted to clean the answer sheets of errors in the Pupil Identification Number (PIN), Sex, Subject, Test Form and the Listening Comprehension Test Form. Since the P3 pupils had had some experience in shading i.e. in P2 while writing the SEA 2008, minimum shading errors were detected in their answer sheets.

The answer sheets were subsequently scanned using OPSCAN 6. The Statistical Package for the Social Sciences (SPSS 12.0) was used for the analysis. The first step was to clean the data received from the OPSCAN 6 (in the SPSS files.) This was done by running a frequency distribution on each of the variables in the data files and cross-tabulating. The outputs were carefully reviewed for missing data and unusual or unexpected responses i.e. for outliers.

The SPSS data files were then sorted or broken into Test Forms for each subject and class. For each Test Form, scoring and item analysis were done using the ITEMAN 3.6 software and SPSS 12.0 Syntax.

Item analysis was used to produce information on each item and aggregate information such as means, standard errors and reliabilities for each Form, as well as total score output were calculated. Scores on each objective tested were also obtained. Total score output was then imported into SPSS as a data file and analyzed for individual schools, districts, regions, gender and the entire country. Means and standard deviations were obtained for each Test Form.

The total score output files from the Test Forms were later merged into one file as a complete data file for each subject and class. The analysis was redone for individual schools, districts, regions, gender and nation. Means and standard deviations and percentages meeting 35% and 55% criteria were obtained. Standard errors on means and percentages meeting each criteria, as well as scores on each objective, were calculated.

Comparative analysis was also done for gender, public, private and EQUALL Project Schools. Performance on the English and Mathematics tests was also analyzed by region, gender and type of schools.

6.0 PRESENTATION OF TEST RESULTS

6.1 Minimum-Competency (35%) and Proficiency (55%) levels

Two cut-off scores established for NEA were used to provide useful information regarding pupil performance and system effectiveness. **Minimum-competency** describes percentage of pupils reaching 35% total score and **Proficiency level** identifies percentage of those reaching 55% of the total score on the test. The 35% minimum-competency level was the collective judgment of some item writers with support from other subject specialists and reflects 10% score points above the chance score of 25%, thereby suggesting learning has taken place. The proficiency level of 55%, determined by the same group of educators, shows that the pupil has learned the curriculum for the class (grade level) to the degree necessary to work at the next grade level.

6.2 System errors/limitations: impact on interpretation and use of NEA tests results

Error is a fact of life in statistical systems. However, during the administration and analysis of tests data of the NEA 2009, great care was taken to control the envisaged errors to acceptable minimums. These errors which are likely to impact on interpretation and use of the results include:

Errors associated with test administration

Due to improper stacking of test booklet forms by test administrators, booklets could be mis-assigned, pupils/administrators may code incorrectly, both pupils and schools may cheat. The most common way in which schools cheat in intact classes is to systematically exclude, through whatever means, less able pupils. Increase in the fraction of such excluded pupils show false improvement over time. The converse is also true. In addition the Capitation Grants and School Feeding policies promote access i.e. raise the participation rate. Success in doing so without improving the school management system as well as instruction could however result in decline in results as less able pupils, especially from poorer backgrounds, are drawn into the system without adequate previous school-based knowledge.

Errors associated with data capture, cleaning and editing

Rigorous data cleaning was employed to ensure high quality of the test data by initial data quality checks on testees' background information particularly Pupil Identification Number (PIN), Sex, Subject, Test Form and the Listening Comprehension Test Form. Doubtful test form information was cross-checked with test material allocation form entries.

Errors associated with scoring

Scored data was cross-checked by comparing electronically generated scores with those obtained from samples of manually scored answer sheets. This was to ensure that the scores obtained represent the true reflection of work done by the specific candidates who took the test.

Errors in analysis

The information provided by the analysis is critical for policy decisions. Any inaccurate results could have devastating effects on the educational system and the economy. It is necessary that care was taken in handling each step of the data analysis. In particular, the following test data handling tasks that could produce errors were carefully watched:

1. The importation of data from ASCII into SPSS: The variable spaces were carefully watched so that columns were assigned to their respective variables.
2. Keying the correct responses: Care was taken to ensure that incorrect responses were not recorded as correct.
3. The syntax commands were cross-checked because a slight change could bring inaccurate results.

6.3 Percentage Mean Scores

The national results of the NEA 2009 show a weak performance of pupils in both English and Mathematics in P3 and P6. The mean scores percent in English for P3 and P6 respectively were 40.2% and 48.2%. The mean scores percent in Mathematics for P3 and P6 respectively were 41.8% and 39.6%.

For the purposes of comparing means over the years the NEA was administered, the means of NEA 2005, 2007 and 2009 are presented in Table 7.

Table 7: Percentage Mean Scores NEA 2005, 2007 and 2009

	PERCENT MEAN SCORES			
	PRIMARY 3		PRIMARY 6	
	ENGLISH	MATHEMATICS	ENGLISH	MATHEMATICS
2005	38.5%	36.6%	43.1%	34.4%
2007	37.6%	35.0%	44.2%	35.7%
2009	40.2%	41.8%	48.2%	39.6%

The 2009 NEA mean scores in both grade levels are above the minimum competency level of 35%. In 2009 as compared to 2005, an increase in mean scores is observed in P3 and P6 English as well as P3 and P6 Mathematics. Over the years, however, the mean scores demonstrate a gradual and steady improvement in the performance of pupils in P6 English and Mathematics. P6 English registered a higher test mean score in 2009 than in 2007 and 2005. The performance in P3 English and P3 Mathematics declined in 2007 as compared to 2005 but both rose in 2009.

6.4 National Percentage of pupils meeting the minimum-competency and proficiency levels

The results from the 2009 NEA on pupils meeting minimum competency and proficiency levels are presented in Table 8.

TABLE 8: Overall distribution of minimum-competency and proficiency NEA 2009

Class/Grade Level	35% Minimum-Competency	55% Proficiency
English P3	57.6	20.0
English P6	76.8	35.6
Mathematics P3	61.2	25.2
Mathematics P6	61.9	13.8

In 2009 NEA, the percentages of pupils meeting the minimum-competency level were higher than those reaching the proficiency level for English and Mathematics in both P3 and P6. The highest minimum-competency and proficiency levels were achieved in P6 English.

6.5 National and Regional Results –P3 and P6 English

The national and regional overall means and standard deviations for 2009 NEA in English are presented in Tables 9 and 10 for P3 and P6 respectively.

Table 9: Performance Of Pupils in P3 English by Region

REGION	NUMBER OF PUPILS	OVERALL MEAN %	STANDARD DEVIATIONS	% REACHING MINIMUM-COMPETENCY	% REACHING PROFICIENCY LEVEL
ASHANTI	4224	41.4	18.34	60.6	22.3
BRONG AHAFO	2549	36.5	17.17	48.6	16.4
CENTRAL	2510	37.4	15.92	52.4	14.7
EASTERN	2587	41.4	16.87	63.0	19.8
GT. ACCRA	2538	50.9	20.92	77.0	40.6
NORTHERN	2440	34.0	14.55	44.7	9.0
UPPER EAST	1274	33.0	12.59	41.8	5.8
UPPER WEST	1196	39.8	19.24	53.2	18.9
VOLTA	2874	40.2	17.24	57.8	19.9
WESTERN	2875	41.8	17.20	62.8	22.0
TOTAL	25267	40.2	17.92	57.6	20.0

Table 10: Performance Of Pupils In P6 English By Region

REGION	NUMBER OF PUPILS	OVERALL MEAN %	STANDARD DEVIATIONS	% REACHING MINIMUM-COMPETENCY	% REACHING PROFICIENCY LEVEL
ASHANTI	4256	48.9	16.33	79.6	37.3
BRONG AHAFO	2361	46.3	15.61	75.9	28.8
CENTRAL	2477	43.6	15.60	69.3	24.1
EASTERN	2468	50.3	17.15	80.5	40.2
GT. ACCRA	2756	57.4	17.16	90.0	58.2
NORTHERN	2280	39.4	15.11	60.4	16.1
UPPER EAST	1104	39.8	14.20	60.0	15.6
UPPER WEST	917	47.9	16.85	76.3	34.8
VOLTA	2799	51.4	17.54	81.1	44.7
WESTERN	2825	49.4	16.76	79.7	37.1
TOTAL	24243	48.2	17.11	76.8	35.6

The national means for P3 and P6 English are 40.2% and 48.2% respectively. The mean scores are therefore 15.2% and 23.2% score points above the chance score of 25% for a multiple-choice test of four options. Fifty-seven percent (57%) of pupils reached the minimum-competency level (35%) for P3 and 76.8% of pupils reached the minimum-competency for P6. The percentages of pupils reaching the minimum-competency level are relatively higher - particularly for P6 - while the percentage of pupils reaching the proficiency level is comparatively low, 20.0% and 35.6%, for P3 and P6 respectively.

On regional basis, in P3 English, the highest mean score of 50.90% was achieved by pupils from the Greater Accra Region followed by the Western, Ashanti, Eastern and others. The Upper East Region had the lowest mean score of 32.89%. Greater Accra showed the greatest disparity between pupils performance with a standard deviation of 20.92 while the Upper East Region displayed the least disparity in achievement with a standard deviation of 12.59. Similarly, in P6 English, again, the Greater Accra Region outperformed all the other regions with a mean score of 57.4% followed by the Volta, Eastern, Western, Ashanti and others. The lowest score was recorded for the Northern Region with a mean score of 39.4%

The large standard deviations across the regions show that there was a wide variation in achievements between pupils from the schools in understanding and use of English in both P3 and P6.

6.6 Frequency distribution of English Scores

Frequency Distribution of pupils shows the spread of pupils on the score range of 0 – 100. The distribution of pupils on the P3 and P6 English are shown in Tables 11 and 12.

Table 11: Frequency Distribution of Scores P3 English

SCORE RANGE	NUMBER OF PUPILS	PERCENTAGE OF PUPILS	CUMULATIVE PERCENTAGE
0-10	289	1.1	1.1
11-20	2555	10.2	11.3
21-30	6147	24.3	35.6
31-40	6397	25.3	60.9
41-50	4149	16.4	77.3
51-60	2427	9.6	86.9
61-70	1437	5.7	92.6
71-80	972	3.8	96.5
81-90	622	2.5	98.9
91-100	272	1.1	100.0
Total	25267	100.0	100.00

Table 11 shows that out of the 25267 pupils who took the test, 6147 representing 24.3% fell within a score range of 21 - 30. In cumulative percent terms, 35.6% of all the pupils fell within the score range of 0 - 30. Nearly, seventy-seven percent, representing the bulk of the pupils, scored below 51.0%. Thus, the majority of the pupils clustered around the lower range of 0 - 50, suggesting a weak performance in P3 English.

Table 12: Frequency Distribution Of Scores P6 English

SCORE RANGE	NUMBER OF PUPILS	PERCENTAGE OF PUPILS	CUMULATIVE PERCENTAGE
0-10	46	0.2	0.2
11-20	714	2.9	3.1
21-30	3204	13.2	16.3
31-40	5458	22.5	38.9
41-50	4719	19.5	58.3
51-60	4019	16.6	74.9
61-70	3150	12.9	87.9
71-80	2141	8.8	96.7
81-90	751	3.1	99.8
91-100	41	0.2	100
Total	24243	100	100

Table 12 shows that out of the 24243 pupils who took the test, 9422 of them representing 38.9% lie between the score range of 0 – 40. In fact, more than one-half of the pupils 58.3 scored below 51.0% of the total mark, an indication of weakness in English at P6. From the scores, the pupils clustered around the lower score range of 0 - 50. Only 41 pupils representing 0.2% had scores between 91 -100.

6.7 National and Regional Results – Mathematics P3 and P6

The national and regional overall means and standard deviations for 2009 NEA in Mathematics are presented in Tables 13 and 14 for P3 and P6 respectively.

Table 13: Performance Of Pupils In P3 Mathematics By Region

REGION	NUMBER OF PUPILS	OVERALL MEAN%	STANDARD DEVIATIONS	%REACHING MINIMUM COMPETENCY	% REACHING PROFICIENCY LEVEL
ASHANTI	4442	43.15	18.71	63.4	27.8
BRONG AHAFO	2511	43.15	17.25	63.4	25.0
CENTRAL	2613	38.65	16.19	55.2	17.9
EASTERN	2591	41.03	16.53	61.7	22.4
GREATER ACCRA	2535	48.87	19.54	74.6	40.0
NORTHERN	2117	35.59	17.27	45.6	15.2
UPPER EAST	1202	34.15	15.48	43.3	12.5
UPPER WEST	962	41.42	19.81	57.7	26.1
VOLTA	2620	41.93	17.41	62.9	24.8
WESTERN	2719	44.89	18.13	68.4	30.5
TOTAL	24312	41.82	18.12	61.2	25.2

Table 14: Performance Of Pupils In P6 Mathematics By Region

REGION	NUMBER OF PUPILS	OVERALL MEAN%	STANDARD DEVIATIONS	%REACHING MINIMUM COMPETENCY	% REACHING PROFICIENCY LEVEL
ASHANTI	4108	40.0	13.25	64.1	14.8
BRONG AHAFO	2278	38.1	13.07	55.7	11.9
CENTRAL	2398	38.2	12.10	58.5	10.9
EASTERN	2339	40.5	13.12	66.3	13.9
GREATER ACCRA	2477	44.8	14.10	75.9	23.0
NORTHERN	1940	33.8	11.71	42.2	5.6
UPPER EAST	1076	34.6	11.26	46.1	5.6
UPPER WEST	857	39.4	12.02	62.1	12.8
VOLTA	2590	41.4	13.76	67.1	16.6
WESTERN	2788	40.8	13.08	65.3	14.9
TOTAL	22851	39.6	13.28	61.9	13.8

The national mean for P3 and P6 Mathematics are 41.8% and 39.6% respectively. The mean scores are therefore 16.8% and 14.6% score points above the chance score of 25% for a multiple-choice test of four options. Sixty-one percent (61%) of pupils reached the minimum-competency level (35%) for P3 and 76.8% of pupils reached a minimum-competency for P6. The percentages of pupils reaching

minimum-competency level are almost equal for P3 and P6. In contrast, the percentages of pupils reaching the proficiency level in P3 is higher than P6.

On regional basis, in P3 Mathematics, the highest mean score of 48.9% was achieved by pupils from the Greater Accra Region followed by the Western, Ashanti, Eastern and others. The Upper East Region had the lowest mean score of 34.2%. Greater Accra showed the greatest disparity between pupils performance with a standard deviation of 19.5 while the Upper East Region displayed the least disparity in achievement with a standard deviation of 15.5. The large standard deviations across the regions in P3 Mathematics show that there was a wide variation in achievements between pupils from the schools in understanding and use of Mathematics.

In P6 Mathematics, again, the Greater Accra Region outperformed all the other regions with a mean score of 44.8% followed by the Volta, Eastern, Western, Ashanti and others. The lowest mean score of 33.8% was recorded for the Northern Region. In P6 however, smaller standard deviations were found across the regions, an indication of nearly homogenous mathematical abilities among the pupils. The testees appeared to be homogeneous in their mathematical abilities in P6.

6.8 Frequency Distribution of Pupils on Mathematics scores

Table 15: Frequency Distribution Of Scores In P3 Mathematics

SCORE RANGE	NUMBER OF PUPILS	PERCENTAGE OF PUPILS	CUMULATIVE PERCENTAGE
0-10	266	1.1	1.1
11-20	2485	10.2	11.3
21-30	5275	21.7	33.0
31-40	5197	21.4	54.4
41-50	4145	17.0	71.4
51-60	2999	12.3	83.7
61-70	2023	8.3	92.1
71-80	1268	5.2	97.3
81-90	607	2.5	99.8
91-100	47	0.2	100
Total	24312	100	100

The number of pupils who obtained scores between 21 - 30 of the total mark was 5275 representing 21.7% of all the pupils. In percent cumulative terms, 33.0% of the pupils obtained from 0 - 30 of the total score for the P3 Mathematics test. The bulk of the pupils (71.4%) scored below 51.0%, an indication of weakness in P3 Mathematics by the majority of the pupils. Frequency distribution of P6 scores on the Mathematics test is presented in Table 16 below.

Table 16: Frequency Distribution Of Pupils On P6 Mathematics Scores

SCORE RANGE	NUMBER OF PUPILS	PERCENTAGE OF PUPILS	CUMULATIVE PERCENTAGE
0-10	58	0.3	0.3
11-20	960	4.2	4.5
21-30	5120	22.4	26.9
31-40	7371	32.2	59.1
41-50	5130	22.4	81.6
51-60	2537	11.1	92.7
61-70	1,086	4.7	97.4
71-80	434	1.9	99.3
81-90	147	0.6	99.9
91-100	8	0.04	100
Total	22851	100	100

As shown in Table 16, 5120 pupils, representing 22.4%, fell within the score range of 21 - 30. In cumulative terms, 26.9% of all the pupils scored from 0 – 30 on the P6 Mathematics test. Similarly, 81.6% of all the pupils scored below 51.0%, showing a greater cluster of pupils lying in the lower range of the distribution. This indicates a weak performance on the Mathematics test, where only 18.4% of all the pupils scored above 50.0%.

7.0 Gender Performance of Pupils in English and Mathematics

The national performances of boys and girls on the English tests are shown in Table 17.

Table 17: National Performance of Boys and Girls in English

SEX	NUMBER OF PUPILS	OVERALL MEAN %	STANDARD DEVIATIONS	% REACHING MINIMUM-COMPETENCY	% REACHING PROFICIENCY LEVEL
	P3 ENGLISH				
BOYS	12,534	40.0	17.75	31.3	13.1
GIRLS	12,733	40.3	18.07	30.0	12.2
TOTAL	25,267	40.2	17.92	61.2	25.2
P6 ENGLISH					
BOYS	12465	48.3	17.14	76.9	35.7
GIRLS	11773	48.2	17.09	76.8	35.5
TOTAL	24238	48.2	17.11	76.9	35.6

In P3 English, the performance of girls is slightly higher than that of boys. The reverse is the case in P6 English. More boys attained the minimum competency and proficiency levels in P3 English than girls. A slightly higher percentage of boys reached the minimum competency than girls In P6 English. The regional performance of boys and girls in P3 and P6 English are shown in Tables 18 and 19.

7.1 Regional Performance of Boys and Girls on the English Tests

Table 18: Regional Performance of Boys and Girls in P3 English

REGION	NUMBER OF BOYS	NUMBER OF GIRLS	OVERALL MEAN%		STANDARD DEVIATIONS	
			BOYS	GIRLS	BOYS	GIRLS
ASHANTI	2,157	2,267	41.3	41.5	18.37	18.31
B. AHAFO	1,281	1,268	36.2	36.8	16.86	17.47
CENTRAL	1,255	1,255	38.3	36.5	16.41	15.36
EASTERN	1,275	1,312	40.9	41.8	16.79	16.93
GT. ACCRA	1,147	1,391	50.8	51.0	20.78	21.03
NORTHERN	1,316	1,124	34.0	33.9	14.18	14.97
UPPER EAST	641	633	33.3	32.5	13.45	11.65
UPPER WEST	594	602	40.8	38.7	19.37	19.07
VOLTA	1,434	1,440	40.0	40.3	17.20	17.29
WESTERN	1,434	1,441	41.2	42.5	16.72	17.66
TOTAL	12,534	12,733	40.0	40.3	17.75	18.07

Table 18 shows that girls from the Greater Accra Region outperformed all girls and boys from the other regions of the country. They were followed by boys from Greater Accra, girls from Western, girls from Eastern, girls and boys from Ashanti and boys from Western in that order. The least mean scores of 33.3% and 32.5% were recorded for Upper East Region boys and girls respectively.

Table 19: Regional Performance of Boys and Girls in P6 English

REGION	NUMBER OF BOYS	NUMBER OF GIRLS	OVERALL MEAN%		STANDARD DEVIATIONS	
			BOYS	GIRLS	BOYS	GIRLS
ASHANTI	2150	2150	49.4	48.3	16.50	16.13
B. AHAFO	1234	1127	47.1	45.5	16.02	15.10
CENTRAL	1308	1169	44.1	43.2	15.44	15.80
EASTERN	1299	1169	49.8	50.8	17.10	17.21
GT. ACCRA	1286	1470	57.2	57.6	17.6	16.81
NORTHERN	1214	1066	39.8	39.0	15.17	15.04
UPPER EAST	583	521	40.0	39.5	14.48	13.90
UPPER WEST	512	405	48.3	47.3	16.73	17.00
VOLTA	1452	1347	51.3	51.5	17.68	17.40
WESTERN	1427	1398	49.5	49.3	16.76	16.76
TOTAL	12465	11773	48.3	48.2	17.14	17.08

Table 19 shows girls in Greater Accra Region topped boys and girls from the other regions with a mean score of 57.6%. They were followed closely by boys from Greater Accra, girls and boys from Volta, girls and boys from Eastern, boys from Western and boys from Ashanti while boys from Upper West tied with girls from Ashanti in that order. Northern Region recorded the lowest girls' mean score of 39.0% as well as the least boys' mean score of 39.8%.

7.2 National Performance of Boys and Girls in Mathematics

Table 20 displays the national performance of boys and girls on the Mathematics tests in P3 and P6.

Table 20: National Performance of boys and Girls in Mathematics

SEX	NUMBER OF PUPILS	OVERALL MEAN %	STANDARD DEVIATIONS	% REACHING MINIMUM-COMPETENCY	% REACHING PROFICIENCY LEVEL
		P3 Mathematics			
BOYS	12110	42.4	18.35	62.8	26.2
GIRLS	12202	41.2	17.88	59.7	24.2
TOTAL	24312	41.8	18.12	61.2	25.2
	P6 Mathematics				
BOYS	11735	40.4	13.64	63.9	15.4
GIRLS	11116	38.8	12.84	59.8	12.1
TOTAL	22851	39.6	13.28	61.9	13.8

On the basis of gender, boys achieved slightly higher mean scores in Mathematics than girls at the two grade levels, P3 and P6. Consequently, the percentages of boys reaching the minimum-competency and proficiency levels and above in Mathematics were also higher than girls.

7.3 Regional Performance of Boys and Girls in Mathematics

The regional performance of girls and boys in Mathematics are shown in Table 21 and 22.

Table 21: Regional Performance of Boys and Girls in P3 Mathematics

REGION	NUMBER OF BOYS	NUMBER OF GIRLS	OVERALL MEAN%		STANDARD DEVIATIONS	
			BOYS	GIRLS	BOYS	GIRLS
ASHANTI	2188	2254	43.7	42.6	18.84	18.57
B. AHAFO	1261	1250	43.3	40.9	17.78	16.63
CENTRAL	1310	1303	40.0	37.4	16.61	15.65
EASTERN	1280	1311	41.7	40.4	16.46	16.58
GT. ACCRA	1128	1407	49.9	48.1	19.89	19.23
NORTHERN	1163	954	35.5	35.7	17.27	17.28
UPPER EAST	621	581	34.3	34.1	15.65	15.31
UPPER WEST	467	495	42.7	40.2	20.67	18.91
VOLTA	1322	1298	42.8	41.1	17.85	16.91
WESTERN	1370	1349	45.5	44.3	18.01	18.23
TOTAL	12110	12202	42.4	41.2	18.35	17.88

From Table 21, boys in the Greater Accra Region attained the highest mean score of 49.9%. They were followed closely by girls from Greater Accra, boys and girls from Western, boys from Ashanti, boys from Volta, boys from Upper West, girls from Ashanti, boys from Eastern and girls from the Volta Region in that order. Upper East Region recorded the lowest girls' mean score of 34.1% as well as the least boys' mean score of 34.3%.

Table 22: Regional Performance of Boys and Girls in P6 Mathematics

REGION	NUMBER OF BOYS	NUMBER OF GIRLS	OVERALL MEAN%		STANDARD DEVIATIONS	
			BOYS	GIRLS	BOYS	GIRLS
ASHANTI	2076	2032	41.2	38.9	13.84	12.52
B. AHAFO	1187	1091	39.3	36.7	13.81	12.07
CENTRAL	1262	1136	38.9	37.4	12.53	11.55
EASTERN	1225	1114	40.5	40.4	13.02	13.23
GT. ACCRA	1147	1330	45.5	44.2	14.63	13.61
NORTHERN	1026	914	34.7	32.9	11.95	11.36
UPPER EAST	563	513	35.8	33.4	11.80	10.52
UPPER WEST	485	372	40.9	37.5	12.26	11.42
VOLTA	1354	1236	41.9	40.7	14.28	13.13
WESTERN	1410	1378	41.5	40.0	13.33	12.77
TOTAL	11735	11116	40.4	38.8	13.64	12.83

From Table 22, boys in the Greater Accra Region had the highest mean score of 45.5% followed by their girl counterparts with a mean score of 44.2%. Boy from Volta, boys from Western, boys from Ashanti and girls from Greater Accra followed in that order. Northern Region recorded the lowest girls mean score of 32.9% as well as the least boys' mean score of 34.7%.

7.4 Test of Significance for Gender Differences in performance in English and Mathematics

The differences between the mean scores for boys and girls in both English and Mathematics were tested for significance. The t-test was used to determine if there was any significant difference between the performance of boys and girls on the English and Mathematics tests in the respective grade levels.

The results show that:

- i. In P3 and P6 English, no significant difference was observed between the performance of boys and girls on the 2009 NEA English tests
- ii. In Mathematics, boys significantly outperformed girls on the 2009 NEA Mathematics tests at both P3 and P6.

8.0 Comparison of Performance of Public, Private and Project Schools

The information on the project schools shows that the EQUALL Schools are all under BTL/BTE literacy programme. The performance of the schools on the tests based on categorization as Cohort I, Cohort II, Gait II and BTL tells a different story when compared to the performance of the schools as Combined EQUALL Project Schools. Thus, the analysis presented here are in two parts; performance by Public, Private and Categorized EQUALL Project schools and performance by Public, Private and Combined EQUALL Project Schools.

8.1 Performance of Pupils In P3 English By School Type

Table 26a: Performance of Pupils In P3 English By Public, Private and Categorized EQUALL Project Schools

SCHOOL TYPE	NO. OF TESTEES	%MEAN	STD. DEVIATION	% REACHING MINIMUM COMPETENCY	% REACHING PROFICIENCY
PUBLIC	18,747	38.33	16.88	54.19	16.40
PRIVATE	3,135	53.93	20.25	81.88	48.42
COHORT I	764	36.76	13.01	54.71	9.42
COHORT II	836	35.97	15.48	49.88	11.60
GAIT II	1,124	36.34	15.42	49.20	12.46
BTL	661	42.01	17.02	64.90	21,18
TOTAL	25,267	40.15	17.92	57.56	19.56

Table 26b: Performance Of Pupils In P3 English By Public, Private and Combined EQUALL Project Schools

SCHOOL TYPE	NO. OF TESTEES	%MEAN	STD. DEVIATION	% REACHING MINIMUM COMPETENCY	% REACHING PROFICIENCY
PUBLIC	18,747	38.33	16.88	54.19	16.40
PRIVATE	3,135	53.93	20.25	81.88	48.42
COMBINED EQUALL PROJECT SCHOOLS	3385	37.8	15.2	54.7	11.2
TOTAL	25,267	40.15	17.92	57.56	19.56

From Table 26a, Private schools topped the list of high performers with a mean score of 53.9%, followed by BTL, Public Schools, Cohort I, Gait II with Cohort II the least. The performance of the Combined EQUALL Project schools in Table 26b is lower than that of the public schools.

8.2 Performance Of Pupils In P6 English By School Type

Table 27a: Performance Of Pupils In P6 English By Public, Private and Categorized EQUALL Project Schools

SCHOOL TYPE	NO. OF TESTEES	%MEAN	STD. DEVIATION	% REACHING MINIMUM COMPETENCY	% REACHING PROFICIENCY
PUBLIC	18180	46.9	16.71	75.0	32.3
PRIVATE	2916	59.7	16.87	91.6	63.7
COHORT I	734	44.4	14.44	73.7	25.2
COHORT II	812	41.5	14.70	65.9	19.8
GAIT II	858	44.2	13.61	74.3	23.9
BTL	738	52.6	17.15	82.1	46.8
TOTAL	24238	48.2	17.11	76.9	35.6

Table 27b: Performance Of Pupils In P6 English By Public, Private and Combined EQUALL Project Schools

SCHOOL TYPE	NO. OF TESTEES	%MEAN	STD. DEVIATION	% REACHING MINIMUM COMPETENCY	% REACHING PROFICIENCY
PUBLIC	18180	46.9	16.71	75.0	32.3
PRIVATE	2916	59.7	16.87	91.6	63.7
COMBINED EQUALL PROJECT SCHOOLS	3142	45.7	15.0	74.0	28.9
TOTAL	24238	48.2	17.11	76.9	35.6

From Table 27a, in P6 Mathematics like P3 Mathematics, Private schools outperformed all the other school types with a mean score of 59.7%, followed by BTL schools and Public schools came third in the order of performance. In a similar manner, a greater number of pupils from private schools and BTL schools attained minimum competency and proficiency levels than the other school types. The performance of the Combined EQUALL Project schools in Table 27b is lower than that of the public schools.

8.3 Performance Of Pupils In P3 Mathematics By School Type

Table 28a: Performance of Pupils in P3 Mathematics by Public, Private and Categorized EQUALL Project Schools

SCHOOL TYPE	NO. OF TESTEES	%MEAN	STD. DEVIATION	% REACHING MINIMUM COMPETENCY	% REACHING PROFICIENCY
PUBLIC	17904	40.2	17.33	58.5	21.7
PRIVATE	3100	53.3	19.65	81.0	50.3
COHORT I	757	37.2	15.32	50.9	15.3
COHORT II	868	39.2	16.63	55.5	19.7
GAIT II	1036	39.9	17.72	57.6	21.6
BTL	647	43.9	17.05	68.9	27.5
TOTAL	24312	41.8	18.12	61.2	25.2

Table 28b: Performance Of Pupils In P3 Mathematics By Public, Private and Combined EQUALL Project Schools

SCHOOL TYPE	NO. OF TESTEES	%MEAN	STD. DEVIATION	% REACHING MINIMUM COMPETENCY	% REACHING PROFICIENCY
PUBLIC	17904	40.2	17.33	58.5	21.7
PRIVATE	3100	53.3	19.65	81.0	50.3
COMBINED EQUALL PROJECT SCHOOLS	3308	40.0	16.7	58.2	21.0
TOTAL	24312	41.8	18.12	61.2	25.2

Table 28a shows that in P3 Mathematics, Private schools topped the list of high performers with a mean score of 53.3%, followed by BTL and Public Schools in that order. Cohort I schools obtained the lowest mean score of 37.2%. A similar scenario in performance is observed on pupils who reached the

Minimum Competency and Proficiency levels. The performance of the Combined EQUALL Project schools in Table 28b is slightly lower than that of the public schools.

8.4 Performance Of Pupils In P6 Mathematics By School Type

Table 29a: Performance Of Pupils In P6 Mathematics By Public, Private and Categorized EQUALL Project Schools

SCHOOL TYPE	NO. OF TESTEES	%MEAN	STD. DEVIATION	% REACHING MINIMUM COMPETENCY	% REACHING PROFICIENCY
PUBLIC	17078	38.6	12.82	54.2	16.4
PRIVATE	2808	47.7	14.76	81.9	48.4
COHORT I	665	37.5	12.01	54.7	9.4
COHORT II	749	36.6	11.53	49.9	11.6
GAIT II	833	37.3	10.62	49.2	12.4
BTL	718	40.9	12.17	64.9	21.2
TOTAL	22851	39.6	13.28	57.7	20.0

Table 29b: Performance Of Pupils In P6 Mathematics By Public, Private and Combined EQUALL Project Schools

SCHOOL TYPE	NO. OF TESTEES	%MEAN	STD. DEVIATION	% REACHING MINIMUM COMPETENCY	% REACHING PROFICIENCY
PUBLIC	17078	38.6	12.82	54.2	16.4
PRIVATE	2808	47.7	14.76	81.9	48.4
COMBINED EQUALL PROJECT SCHOOLS	2965	38.1	11.6	54.7	13.7
TOTAL	22851	39.6	13.28	57.7	20.0

From Table 29a, again, Private schools outperformed all the other school types, followed by BTL and Public Schools in that order. Cohort II schools obtained the lowest mean score of 36.6%. A similar scenario in performance was observed on pupils who reached the Minimum Competency and Proficiency levels. The performance of the Combined EQUALL Project schools in Table 29b is lower than that of the public schools.

9.0 Summary, Conclusions and Recommendations

9.1 Summary

Percentage Mean scores

In 2009 as compared to the baseline year of 2005, an increase in mean scores is achieved in P3 and P6 English Mathematics. Over the years, 2005, 2007 and 2009 however, the mean scores demonstrate a gradual and steady improvement in the performance of pupils in P6 English and P6 Mathematics. The performance in P3 English and P3 Mathematics declined in 2007 as compared to 2005 but both rose in 2009.

National Achievement Standards

In 2009, nearly 60 percent of the pupils attained the national Minimum-competency level in P3 English and Mathematics. A higher percentage (76 and 61) of pupils reached the Minimum-competency level in P6 English and Mathematics respectively. At both grade levels the number of pupils reaching the Proficiency level of 55% is low. From the performance of the Baseline year of 2005, the percentages of pupils meeting the minimum-competency level were higher than those reaching the proficiency level in English and Mathematics in both P3 and P6. Although the percentages of pupils reaching the minimum competency and proficiency levels have increased in 2009, lower achievements were registered in 2007 and 2005. Generally, the number of pupils attaining the proficiency level in English and Mathematics leaves much to be desired, indicating general weaknesses in the subjects at all the grade levels.

National Gender Performance: In P3 English, the performance of girls is slightly higher than that of boys. The reverse is the case in P6 English. More boys attained the minimum competency and proficiency levels in P3 English than girls. In P6 English, a slightly higher percentage of boys reached the minimum competency than girls. The differences in performance between the boys and girls in English was not significant. However, boys outperformed girls significantly in Mathematics in P3 and P6.

9.2 Conclusions

In Ghana, the ability to read and understand simple texts in English is essential for a child's progress in schooling. In a similar way simple numeracy skills are required for effective functioning in life.

In the situation where, on a national basis, only 16- 32% of P3 and P6 public school pupils obtained 55% and above in English and 16 – 21% in Mathematics leaves much to be desired. The performance of most public school pupils is low despite the huge investment made through interventions geared towards access and quality. More interventions targeting the improvement of the quality of education should be encouraged to sustain and improve on the little gains made in achievements in 2009.

9.3 Recommendations

The following recommendations are based on the administration of the NEA 2009 and the test results in the hope that the issues raised would be addressed.

Research

The performance of pupils on the NEA over the years; 2005, 2007 and 2009 portrays an inconsistent trend in some of the subjects. In some of the African countries, school-based data is collected in addition to the test data. Coupling research data to the test data provides more useful information to guide policy in terms of what is improving education quality and what is not. Future NEA should be allowed to undertake a similar process. In addition, other researches should be conducted to unearth processes and practices that improve teaching and learning in schools.

Mainstreaming of NEA and SEA Tests

National Assessment of Primary Education started in 1992 with the Criterion-Referenced Test (CRT). Ghana Basic Education Comprehensive Assessment System (Ghana BECAS) came in to replace the CRT in 2004. Unfortunately, the assessment system has no defined organizational structure at the Regional and District levels with adequately trained personnel to undertake the activity, thereby lacking skill transfer for sustainability. An organizational framework needs to be established with an Advisory Board in line with the National Council on Curriculum and Assessment (NACCA) to oversee the assessments at all levels.

Meeting the Needs of the Assessment Services Unit (ASU)

ASU needs to be resourced with Land Line Telephone, Internet Connectivity and supported by personnel from the CRDD in the following areas: Subject Specialists in English and Mathematics, a Data Analyst, a Graphic Artist/Typist, Consultants and a cleaner. ASU staff also needs capacity building in various aspects of assessment.

Item Bank

An Item Bank needs to be established to facilitate test paper development to enable ASU cut down on the time spent on constructing new test items. Establishment of an item Bank will greatly help in meeting assessment time lines.

Funding Assessment Activities

Assessment is expensive and time bound. In 2009, most of the activities planned by ASU could not be executed on time because of delays in funding. The Ministry of Education and Ghana Education Service should set aside funds to support the assessment activities yearly since it is a critical activity that generates indicators for monitoring and evaluating the quality of primary education.

Pre-coding of Scannable Answer Sheets

Scannable answer sheets should be procured in time for pre-coding by TAs at their training sessions, prior to the actual administration of the tests.

Test Monitors

During the monitoring of the test administration, many schools as possible should be monitored.

Class Enrolments and Supply of Test Materials

Accurate enrolment figures for classes that take the NEA are essential for the allocation, packing and dispatch of test materials to the Test Administrators and schools. The Educational Information Management System (EMIS) should design a system to update school enrolments on a regular basis. This will help in obtaining reliable enrolment data for the delivery of adequate test materials to schools.

APPENDICES

Appendix 1A: Performance Of Pupils in P3 English by Region					
Appendix 1B: Performance Of Pupils In P6 English By Region					
REGION	NUMBER OF PUPILS	OVERALL MEAN %	STANDARD DEVIATIONS	% REACHING COMPETENCY	% REACHING PROFICIENCY LEVEL
REGION	4224	41.4	18.34	60.6	22.3
BRUNDAHAFO	2346	48.9	16.37	78.6	36.4
BRONGAHAFO	2360	46.4	15.61	75.4	28.9
EASTERN	2487	43.4	18.69	69.0	29.8
EASTERNA	2498	50.9	20.92	89.5	40.6
NORTHERN	2746	57.6	17.45	94.9	58.2
NORTHERN	2280	39.6	12.40	60.4	16.8
UPPER WEST	1196	39.8	14.20	69.9	15.6
UPPER WEST	2874	47.2	16.84	76.8	34.9
WESTERN	2899	51.8	17.50	81.8	44.7
WESTERN	28267	40.2	19.92	59.6	20.0
TOTAL	24243	48.2	17.11	76.8	35.6

Appendix 2A: Frequency Distribution of Scores P3 English			
SCORE RANGE	NUMBER OF PUPILS	PERCENTAGE OF PUPILS	CUMULATIVE PERCENTAGE
0-10	289	1.1	1.1
11-20	2555	10.2	11.3
21-30	6147	24.3	35.6
31-40	6397	25.3	60.9
41-50	4149	16.4	77.3
51-60	2427	9.6	86.9
61-70	1437	5.7	92.6
71-80	972	3.8	96.5
81-90	622	2.5	98.9
91-100	272	1.1	100.0
Total	25267	100.0	100.00

Appendix 2B: Frequency Distribution Of Scores P6 English

SCORE RANGE	NUMBER OF PUPILS	PERCENTAGE OF PUPILS	CUMULATIVE PERCENTAGE
0-10	46	0.2	0.2
11-20	714	2.9	3.1
21-30	3204	13.2	16.3
31-40	5458	22.5	38.9
41-50	4719	19.5	58.3
51-60	4019	16.6	74.9
61-70	3150	12.9	87.9
71-80	2141	8.8	96.7
81-90	751	3.1	99.8
91-100	41	0.2	100
Total	24243	100	100

Appendix 3A: Performance Of Pupils In P3 Mathematics By Region

REGION	NUMBER OF PUPILS	OVERALL MEAN%	STANDARD DEVIATIONS	%REACHING MINIMUM COMPETENCY	% REACHING PROFICIENCY LEVEL
ASHANTI	4442	43.15	18.71	63.4	27.8
BRONG AHAFO	2511	43.15	17.25	63.4	25.0
CENTRAL	2613	38.65	16.19	55.2	17.9
EASTERN	2591	41.03	16.53	61.7	22.4
GREATER ACCRA	2535	48.87	19.54	74.6	40.0
NORTHERN	2117	35.59	17.27	45.6	15.2
UPPER EAST	1202	34.15	15.48	43.3	12.5
UPPER WEST	962	41.42	19.81	57.7	26.1
VOLTA	2620	41.93	17.41	62.9	24.8
WESTERN	2719	44.89	18.13	68.4	30.5
TOTAL	24312	41.82	18.12	61.2	25.2

Appendix 3B: Performance Of Pupils In P6 Mathematics By Region

REGION	NUMBER OF PUPILS	OVERALL MEAN%	STANDARD DEVIATIONS	%REACHING MINIMUM COMPETENCY	% REACHING PROFICIENCY LEVEL
ASHANTI	4108	40.0	13.25	64.1	14.8
BRONG AHAFO	2278	38.1	13.07	55.7	11.9
CENTRAL	2398	38.2	12.10	58.5	10.9
EASTERN	2339	40.5	13.12	66.3	13.9
GREATER ACCRA	2477	44.8	14.10	75.9	23.0
NORTHERN	1940	33.8	11.71	42.2	5.6
UPPER EAST	1076	34.6	11.26	46.1	5.6
UPPER WEST	857	39.4	12.02	62.1	12.8
VOLTA	2590	41.4	13.76	67.1	16.6
WESTERN	2788	40.8	13.08	65.3	14.9
TOTAL	22851	39.6	13.28	61.9	13.8

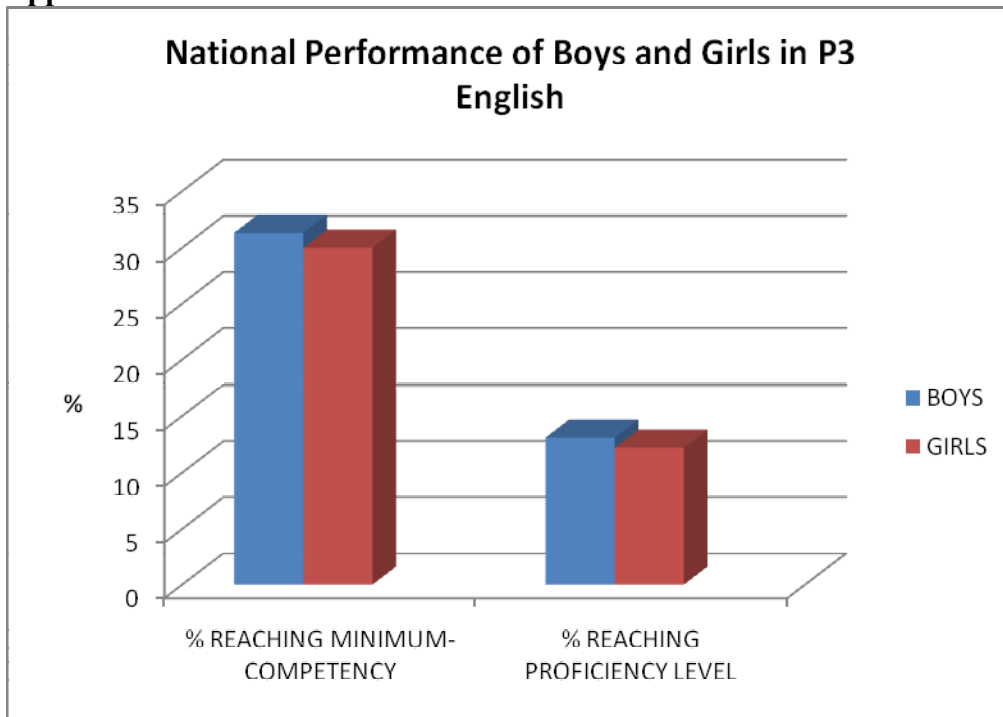
Appendix 4A: Frequency Distribution Of Scores In P3 Mathematics

SCORE RANGE	NUMBER OF PUPILS	PERCENTAGE OF PUPILS	CUMULATIVE PERCENTAGE
0-10	266	1.1	1.1
11-20	2485	10.2	11.3
21-30	5275	21.7	33.0
31-40	5197	21.4	54.4
41-50	4145	17.0	71.4
51-60	2999	12.3	83.7
61-70	2023	8.3	92.1
71-80	1268	5.2	97.3
81-90	607	2.5	99.8
91-100	47	0.2	100
Total	24312	100	100

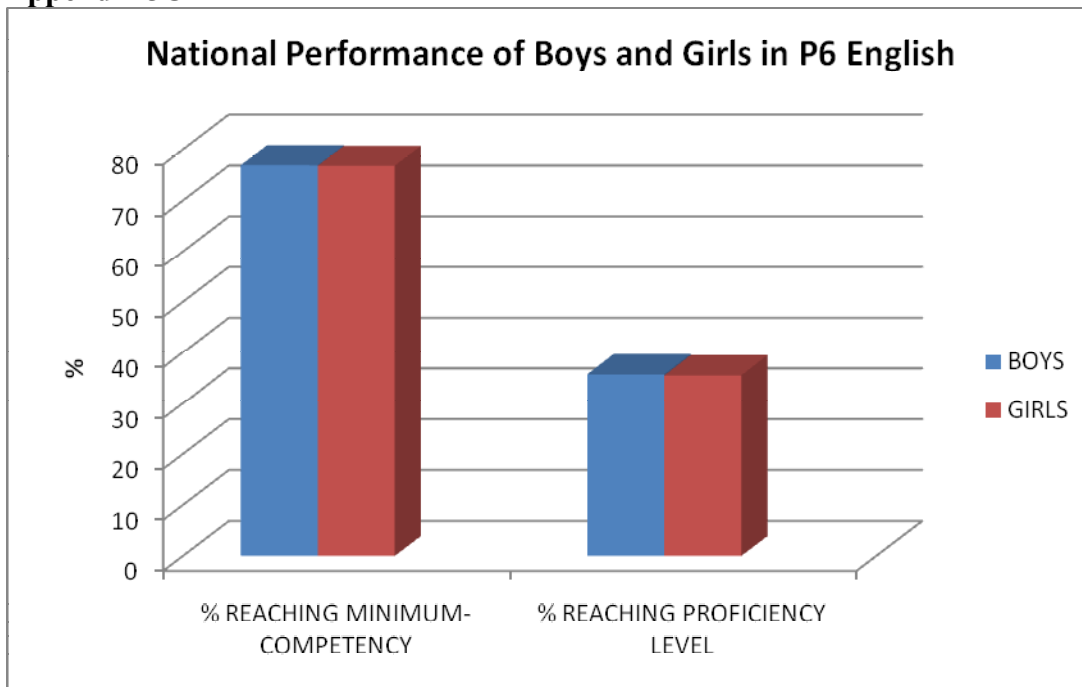
Appendix 4B: Frequency Distribution Of Pupils On P6 Mathematics Scores			
SCORE RANGE	NUMBER OF PUPILS	PERCENTAGE OF PUPILS	CUMULATIVE PERCENTAGE
0-10	58	0.3	0.3
11-20	960	4.2	4.5
21-30	5120	22.4	26.9
31-40	7371	32.2	59.1
41-50	5130	22.4	81.6
51-60	2537	11.1	92.7
61-70	1,086	4.7	97.4
71-80	434	1.9	99.3
81-90	147	0.6	99.9
91-100	8	0.04	100
Total	22851	100	100

Appendix 5A: National Performance of Boys and Girls in English					
SEX	NUMBER OF PUPILS	OVERALL MEAN %	STANDARD DEVIATIONS	% REACHING MINIMUM-COMPETENCY	% REACHING PROFICIENCY LEVEL
		P3 ENGLISH			
BOYS	12,534	40.0	17.75	31.3	13.1
GIRLS	12,733	40.3	18.07	30.0	12.2
TOTAL	25,267	40.2	17.92	61.2	25.2
	P6 ENGLISH				
BOYS	12465	48.3	17.14	76.9	35.7
GIRLS	11773	48.2	17.09	76.8	35.5
TOTAL	24238	48.2	17.11	76.9	35.6

Appendix 5B



Appendix 5C



Appendix 6A: Regional Performance of Boys and Girls in P3 English

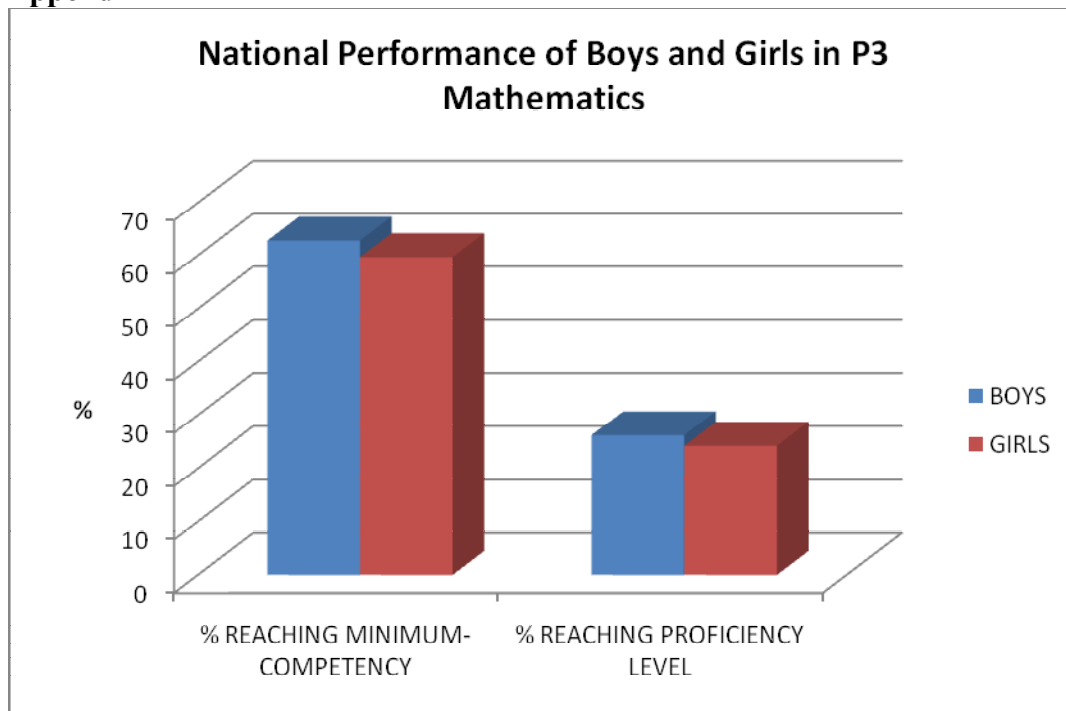
REGION	NUMBER OF BOYS	NUMBER OF GIRLS	OVERALL MEAN%		STANDARD DEVIATIONS	
			BOYS	GIRLS	BOYS	GIRLS
ASHANTI	2,157	2,267	41.3	41.5	18.37	18.31
B. AHAFO	1,281	1,268	36.2	36.8	16.86	17.47
CENTRAL	1,255	1,255	38.3	36.5	16.41	15.36
EASTERN	1,275	1,312	40.9	41.8	16.79	16.93
GT. ACCRA	1,147	1,391	50.8	51.0	20.78	21.03
NORTHERN	1,316	1,124	34.0	33.9	14.18	14.97
UPPER EAST	641	633	33.3	32.5	13.45	11.65
UPPER WEST	594	602	40.8	38.7	19.37	19.07
VOLTA	1,434	1,440	40.0	40.3	17.20	17.29
WESTERN	1,434	1,441	41.2	42.5	16.72	17.66
TOTAL	12,534	12,733	40.0	40.3	17.75	18.07

Appendix 6B: Regional Performance of Boys and Girls in P6 English

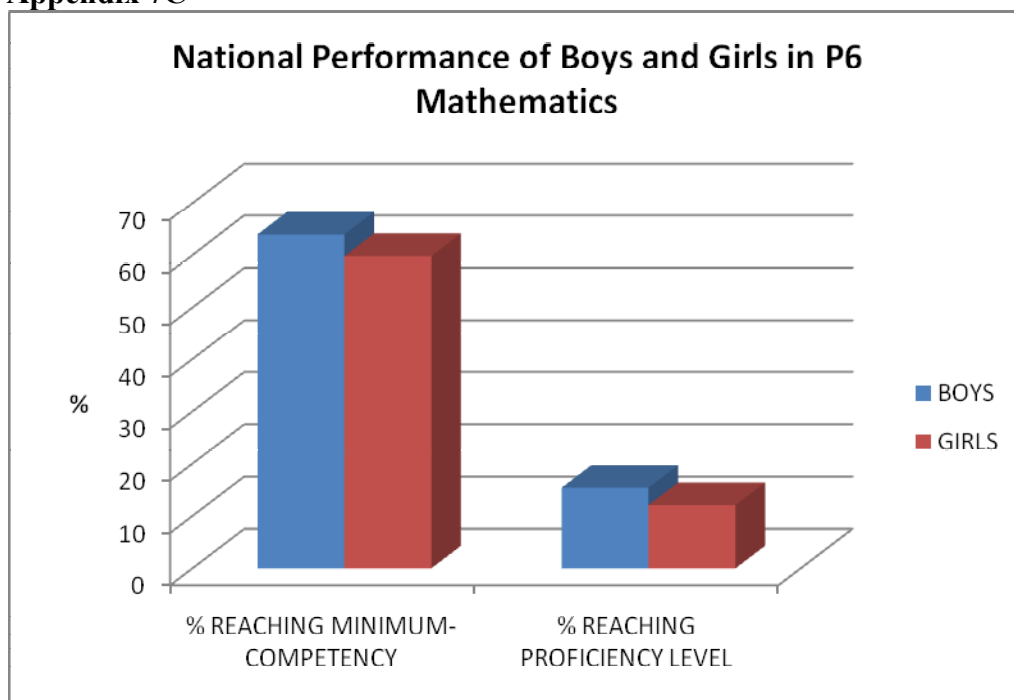
REGION	NUMBER OF BOYS	NUMBER OF GIRLS	OVERALL MEAN%		STANDARD DEVIATIONS	
			BOYS	GIRLS	BOYS	GIRLS
ASHANTI	2150	2150	49.4	48.3	16.50	16.13
B. AHAFO	1234	1127	47.1	45.5	16.02	15.10
CENTRAL	1308	1169	44.1	43.2	15.44	15.80
EASTERN	1299	1169	49.8	50.8	17.10	17.21
GT. ACCRA	1286	1470	57.2	57.6	17.6	16.81
NORTHERN	1214	1066	39.8	39.0	15.17	15.04
UPPER EAST	583	521	40.0	39.5	14.48	13.90
UPPER WEST	512	405	48.3	47.3	16.73	17.00
VOLTA	1452	1347	51.3	51.5	17.68	17.40
WESTERN	1427	1398	49.5	49.3	16.76	16.76
TOTAL	12465	11773	48.3	48.2	17.14	17.08

Appendix 7A: National Performance of boys and Girls in Mathematics					
	NUMBER OF PUPILS	OVERALL MEAN %	STANDARD DEVIATIONS	% REACHING MINIMUM-COMPETENCY	% REACHING PROFICIENCY LEVEL
SEX	P3 Mathematics				
BOYS	12110	42.4	18.35	62.8	26.2
GIRLS	12202	41.2	17.88	59.7	24.2
TOTAL	24312	41.8	18.12	61.2	25.2
	P6 Mathematics				
BOYS	11735	40.4	13.64	63.9	15.4
GIRLS	11116	38.8	12.84	59.8	12.1
TOTAL	22851	39.6	13.28	61.9	13.8

Appendix 7B



Appendix 7C



Appendix 8A: Regional Performance of Boys and Girls in P3 Mathematics						
REGION	NUMBER OF BOYS	NUMBER OF GIRLS	OVERALL MEAN%		STANDARD DEVIATIONS	
			BOYS	GIRLS	BOYS	GIRLS
ASHANTI	2188	2254	43.7	42.6	18.84	18.57
B. AHAFO	1261	1250	43.3	40.9	17.78	16.63
CENTRAL	1310	1303	40.0	37.4	16.61	15.65
EASTERN	1280	1311	41.7	40.4	16.46	16.58
GT. ACCRA	1128	1407	49.9	48.1	19.89	19.23
NORTHERN	1163	954	35.5	35.7	17.27	17.28
UPPER EAST	621	581	34.3	34.1	15.65	15.31
UPPER WEST	467	495	42.7	40.2	20.67	18.91
VOLTA	1322	1298	42.8	41.1	17.85	16.91
WESTERN	1370	1349	45.5	44.3	18.01	18.23
TOTAL	12110	12202	42.4	41.2	18.35	17.88

Appendix 8B: Regional Performance of Boys and Girls in P6 Mathematics

REGION	NUMBER OF BOYS	NUMBER OF GIRLS	OVERALL MEAN%		STANDARD DEVIATIONS	
			BOYS	GIRLS	BOYS	GIRLS
ASHANTI	2076	2032	41.2	38.9	13.84	12.52
B. AHAFO	1187	1091	39.3	36.7	13.81	12.07
CENTRAL	1262	1136	38.9	37.4	12.53	11.55
EASTERN	1225	1114	40.5	40.4	13.02	13.23
GT. ACCRA	1147	1330	45.5	44.2	14.63	13.61
NORTHERN	1026	914	34.7	32.9	11.95	11.36
UPPER EAST	563	513	35.8	33.4	11.80	10.52
UPPER WEST	485	372	40.9	37.5	12.26	11.42
VOLTA	1354	1236	41.9	40.7	14.28	13.13
WESTERN	1410	1378	41.5	40.0	13.33	12.77
TOTAL	11735	11116	40.4	38.8	13.64	12.83