Education Sector Support Programme in Nigeria (ESSPIN)

Report of a small scale evaluation of ESSPIN's support to Kwara State's literacy and numeracy programme

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JG Jigawa
KD Kaduna
KN Kano
KW Kwara
LG Lagos
EN Enugu

Contents

Acronyms and Abbreviations

ESSPIN	Education Sector Support Programme in Nigeria
MLA	Monitoring Learning Achievement
NERDC	Nigerian Educational Research and Development Council
P1	Primary 1
P2	Primary 2
P3	Primary 3
P4	Primary 4
SUBEB	State Universal Basic Education Board
TDNA	Teacher Development Needs Assessment

Abstract

1. This report describes the purpose, process and main findings of a small scale interim evaluation of aspects of ESSPIN's support to literacy and numeracy teaching conducted in October 2011 in Kwara State. The interim evaluation measures change against two of ESSPIN's baseline studies; the Teaching and Learning Survey (2009), and the Monitoring of Learning Achievement Survey (2010) with the aim of evaluating the effectiveness of ESSPIN's support.

Executive Summary

2. This report describes the purpose, process and main findings of a small scale interim evaluation of aspects of ESSPIN's support to teaching and learning conducted in October 2011 in Kwara State. Specifically, the assessment has focussed on the element of ESSPIN's support, the Literacy and Numeracy programme, which aims to improve

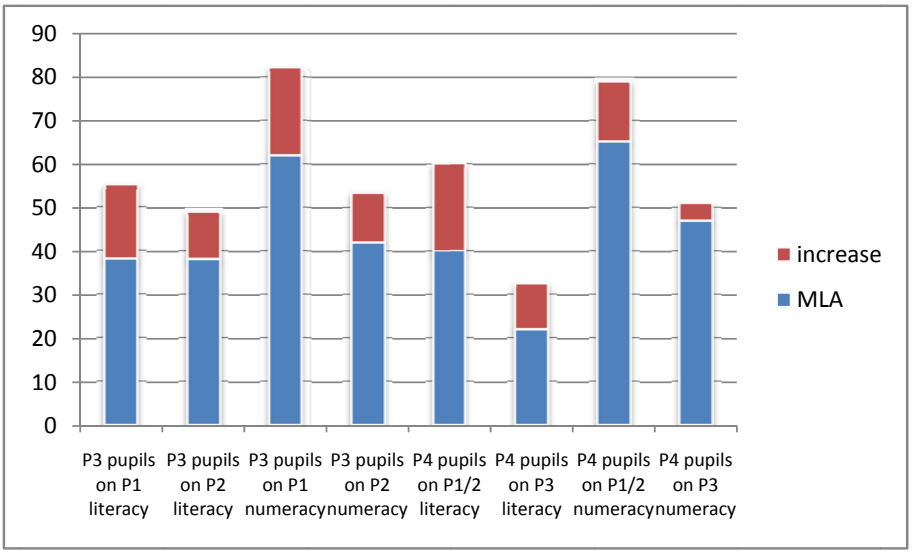
   - generic teaching skills
   - teachers' own literacy skills and understanding of basic mathematics
   - pupil learning outcome levels in literacy and numeracy in the early primary grades.

3. The assessment was in two parts:

   - a classroom observation study to assess whether there has been any change in teaching methodology against baseline data provided by the Teaching and Learning Survey (conducted in May-July 2009)
   - a small scale assessment of learning outcomes for literacy and numeracy to assess whether there is any evidence of improvement in foundational knowledge and skills in lower primary pupils, compared with those of the Monitoring of Learning Achievement (MLA) assessment of June 2010.

4. This report largely endorses ESSPIN's approach. Although learning outcomes in the schools surveyed remain low in terms of attainment of the NERDC curriculum, after two years of support there are clear signs of improvement; in both literacy in English and numeracy, and in the grades assessed, as illustrated in the graph below.

   Chart 1: % point increases in 2011 over baseline scores – learning outcomes



5. Numeracy scores were higher than literacy scores in both grades for both the MLA (2010) and the 2011 assessment.

6. The2010 MLA report expressed considerable concern with the essential foundations of both "subjects" – both the conceptualising of number and basic reading skills were identified as being "below expectation".

7. There is evidence of a dramatic improvement in pupils' ability to conceptualise number. Correct scores from the newly promoted P3 pupils (P2 assessment) on the sequencing number test item has improved by 28 percentage points on the P1 level question and 12 percentage points on the P2 level (correct for stage) question. The correct scores by newly promoted P4 (P3 assessment) on a P1/2 level question on sequencing has improved by a remarkable 65 percentage points from 23 to 93%, and by 20 percentage points on the P3 level question (correct for stage).

8. There has been a corresponding improvement in the basic building blocks of literacy. The correct score for newly promoted P3 pupils for identifying initial letter sounds has improved from 13% to 56%.

9. Although there has been an across the board improvement in pupil attainment, including improvement in the foundations of both subjects in both grades since 2010, pupils are still struggling with many test items at their own grade level. Reading skills at P3 level remain undeveloped.

10. Pupils and teachers have only participated in the Literacy and Numeracy Programme for a year. Teachers have not had time to assimilate the new teaching approaches. None of the pupils assessed were exposed to the new approaches in P1, and the lack of a sound foundation is more problematic for the newly promoted P4 pupils than the P3 pupils. It seems reasonable that levels of achievement will continue to rise as teachers become more

competent over time, and as pupils have been taught well from their important first year in school. Further small scale assessments should be carried out to test this assumption, and to monitor progress in translating the gains in early reading skills into progress with reading for meaning.

11. The classroom observation study showed that classrooms are beginning to change: in the way that they are organised; in the way that teachers and pupils interact; in the way that activities take place. The changes may appear to be small but they are significant, given the competency levels of Kwara teachers as illustrated in the Kwara Teacher Development Needs Assessment (TDNA 2008).

Introduction

12. A small scale interim evaluation of the effectiveness of ESSPIN's support to schools was conducted in October 2011 in Kwara State. The Kwara Literacy and Numeracy Programme has aimed to improve

    - generic teaching skills
    - teachers' own literacy skills and understanding of basic mathematics
    - pupil learning outcome levels in literacy and numeracy in the early primary grades.

13. The assessment was in two parts. The first part assessed whether there had been any changes in teaching methodology against baseline data provided by the Teaching and Learning Survey (conducted in May-July 2009). The second part looked for evidence of improved learning outcomes in literacy and numeracy in lower primary pupils, compared with those of the Monitoring Learning Achievement (MLA) assessment of June 2010.

14. Both original studies painted a grim picture. Broadly, the results of the Teaching and Learning Survey (2009) showed that learners are passive and that teaching is almost totally didactic. Teachers teach the subject and not the children. The very restricted teaching methodology employed by nearly all teachers nearly all the time does not take into account how children learn and fails to cater for children's learning differences. This is undoubtedly a major contributor to the poor learning outcomes evidenced in the MLA assessment of 2010, which reported that the vast majority of children struggle to achieve even basic competency in literacy and numeracy, performing well below their grade level.

15. Both parts of the 2011 interim study were based as closely as possible on the two original studies in terms of test design, test items, school selection and test administration to allow for comparisons to be made. However for practical reasons some minor adjustments had to be made and these (plus the rationale for the adjustments) are explained in the text below.

Structure of the report

16. The report consists of the following:

    - an outline of the methodologies of the two parts of the assessment, including the instruments used, the field trial and the conduct of the main assessment
    - a brief evaluation of the results of the two assessments, and comparisons with the baseline data and reports
    - a brief discussion of some of the issues arising from the results.

Methodology and main activities

Enumerators

17. Data for the interim study was collected by members of the Kwara State School Improvement Team. They received two days training on the use of the instruments for both parts of the evaluation, followed by a one day field trial in schools. This was in turn followed by a further day of training; checking the inter-observer reliability of the team during classroom observations and ensuring that any problems experienced administering the individual pupil assessments were addressed.

School sample

18. The interim study took place in Kwara State, because although some schools in all ESSPIN-supported States have participated in a programme which aimed at improving generic teaching skills (the effectiveness of which should be evident through the classroom observation part of the study), only in Kwara State had teachers received training and support which aimed **directly** at raising levels of literacy and numeracy amongst the teachers and pupils.

19. From the original randomly selected list of primary schools which participated in the MLA, 15 schools were selected, again randomly (although, unlike the MLA, the interim study excluded private schools as to date our work has been in public primary schools). This is a small sample, because the time available to undertake the study was limited and the methodology (whole lesson observation by two observers for part one and individual face-to-face oral assessments for part two) was time consuming.

20. Assessments were conducted in a further seven schools as a "field trial". This trial formed part of the training of the enumerators and as only one day was available for this, the schools were of necessity close to the road, and were not taken from the original sample. They are therefore less representative than the schools in the main study. However no changes to the assessment were made between the field test and the main test and to this extent the results are comparable. The results from the field trial schools have also been analysed and appear separately.

Learning achievement assessment test design and administration

21. Assessments were undertaken of newly promoted P3 and P4 pupils in order to make as close a comparison as possible with the 2010 MLA, as follows:

    - The P2 evaluation assessed pupils in their first weeks in P3, who can realistically be expected to have mastered the P2 curriculum. They were assessed on their mastery of
      - P1 topics (7 questions for literacy and 9 questions for numeracy)
      - P2 topics (10 questions for both literacy and numeracy).

    This enabled a fairly straightforward comparison with the P2 assessments in the 2010 MLA study.

    - The P3 evaluation assessed pupils in their first weeks in P4, who can realistically be expected to have mastered the P3 curriculum. They were assessed on their mastery of
      - P1 and P2 topics (5 questions each for both literacy and numeracy)
      - P3 topics (10 questions for both literacy and numeracy).

22. The design of the P2 evaluation allowed for a direct comparison between the 2010 MLA and the 2011 interim assessment. The P3 evaluation was slightly more problematic in terms of making a comparison with the2010 MLA study, which assessed P4 pupils at the **end** of the academic year. The purpose of the interim study was to assess the effectiveness of ESSPIN-supported initiatives on raising pupil achievement in literacy and numeracy. Testing newly promoted P4 pupils allowed for at least some degree of comparison with the original MLA assessment (on P1-3 questions), although without part of the test which looked at P4 work. The option to test newly promoted P5 pupils was rejected as, to date, the focus for interventions has been on P1-3 only, and therefore last year's P4 pupils would not have been exposed to any of the new initiatives.

23. In the main assessment, 4 boys and 4 girls in each of P3 and 4 were assessed on literacy in English and numeracy giving a total of 240 individual pupil assessments. (In addition there were an additional 60 individual pupil tests conducted as part of the field trial.) For both the 2010 and 2011 assessments, the methodology was based on one-to-one interaction between the SSIT members and randomly selected pupils, thus allowing assessment of both written and non-written skills.

24. Test items for the interim study were drawn from the MLA survey, which in turn was based on the standard NERDC basic education curriculum. Numeracy questions can be grouped as follows for the purposes of discussing these results

    - number concepts (counting, sequencing and fractions)
    - number operations (the four number operations and using money)
    - maths topic areas (measurement, comparing capacity –using both standard and non-standard measures, and the properties of 2 and 3-D shapes, estimation, time and reading graphs).

Early literacy skills are considered under the broad learning areas of the NERDC curriculum:

- reading
- writing,
- speaking and listening
- grammatical accuracy.

Classroom observation test design and administration

25. During the interim study's main assessment, a total of 120 lesson observations were carried out, equally divided between P2 and P3 lessons and between literacy and numeracy (with a further 14 during the field trial). The instrument used and its administration were identical with that of the 2009 Teaching and Learning Survey.

26. Each lesson was observed by two observers; one focused on the teacher and the other on the pupils. They recorded their observations every four minutes, using an instrument which enabled them to identify 23 teacher behaviours and 21 learner behaviours. These behaviours capture three of the principal processes which take place in a classroom: how a class is organised; how learners and teachers talk; and the pedagogic activities of teachers and the learning activities of pupils. This produced a profile of teacher and learner behaviour in each lesson.

The Kwara Literacy and Numeracy Programme

27. It is necessary to look briefly at the content of the intervention in order to understand what changes we could reasonably expect to see. At the programme's heart are high quality, carefully structured lesson plans for literacy and numeracy, which have been introduced into every primary school in the State. These plans lead the teacher carefully through what to do during a lesson and are designed to incrementally build generic teaching skills (as described in para 22 above) as well as steadily developing the teachers' own literacy and numeracy competence alongside that of the pupils.

28. Both the literacy and numeracy plans cover the main learning areas identified in the NERDC curriculum over a period of a week, through simple learner centred activities. In addition, each literacy lesson includes time dedicated to developing early reading skills, using a lively, structured phonics based approach. Every numeracy lesson begins with a daily practice session in which every child is actively involved in revisiting their learning, with a strong emphasis on understanding number concepts.

Findings

Learning achievement assessment

29. In 2010, the MLA findings on attainment for both literacy and numeracy stated that "general achievement [for both grades assessed and for both literacy and numeracy].... was much below that expected in terms of the NERDC curriculum."

30. Within both of the two "subject" areas, the essential foundations were of particular concern. With regard to numeracy, "students tended to achieve better where topics were in the wider area of Mathematics (dealing with area, capacity/weight etc) rather than basic numeracy." (MLA, 2010). The ability to conceptualise number was also of major concern. For literacy, reading was a particular concern and in particular pupils' problems with the building blocks of reading such as the ability to recognise letter names and sounds.

31. The MLA report identified a weak base in Primary 1 and 2 with many pupils struggling to achieve at P1 level by the end of P2. As a result of these poor foundations "students generally find the class 3 and 4 NERDC curriculum too difficult and they are not given sufficient support to cope."

32. Although learning outcomes in the schools surveyed remain low in terms of attainment of the NERDC curriculum, after just over one year of support, the interim study shows that there are clear signs of improvement; in both literacy in English and numeracy, and at both grade levels. As with the baseline MLA study, pupils in 2011 continue to perform slightly better in maths than in literacy in English, at both grade levels. Also, it continues to be generally the case that under performance worsens in the higher grades. This is understandable as pupils who have failed to master foundational concepts such as the conservation of number and letter sounds will have nothing to build on in the higher grades.

33. Beyond these three statements it is difficult to generalise for several reasons. Most notably, the work to improve teaching skills with a specific focus on literacy and numeracy teaching was only introduced just over a year before the interim assessment, so no pupils experienced a strengthened foundation year. Another major issue is the difficulty of attributing an observed change to a specific input, within a process as organic as teaching and learning. The Kwara literacy and numeracy programme has made a conscious effort to target improving the teaching of letter sounds and blends, number concepts and basic operations, and one might expect to see a greater level of improvement in these areas than in the remaining areas. However work to improve generic teaching skills and ensure that teachers understand and apply the basic principles of how children learn – if successful - will also have had an indirect effect on pupil performance in the basic "subjects". In addition, this effect may not be the same across areas of learning. For example some questions, such as measurement, may show raised levels of achievement resulting from teachers' increased use of practical teaching approaches.

34. So, in order to understand in which grades and areas of learning improvement is taking place and those which need either reviewing or further support, it is necessary to break down the results by "subject" and grade (tables appear in Annex 1) and then to look in greater detail at some specific key results (tables in Annex 2).

Literacy in English

A discussion of Primary 2 literacy results (new Primary 3 pupils)

35. The 2010 MLA report stated that "by the end of class 2, only students in private schools are anywhere near the curriculum expectations with respect to answering questions orally, reading, writing answers to oral questions, copying and making use of the continuous present tense of the verb. "

36. By 2011 overall levels of achievement have improved.

Chart 2: Primary 2 - % correct responses – literacy in English (new P3 pupils)

37. The equivalent 2010 MLA results show that pupils responded correctly to just over a third of both the P1 and P2 questions. The 2011 study shows an increase in the percentage of correct scores on both sets of questions, to around 50% of correct responses. In the 2011 assessment there is a slightly greater % increase with the P1 questions.

38. On the **P1 questions**, the percentage scores (averaging the field and main tests) were higher in 2011 than in 2010 on **every** test item (see Annex 2 for details).

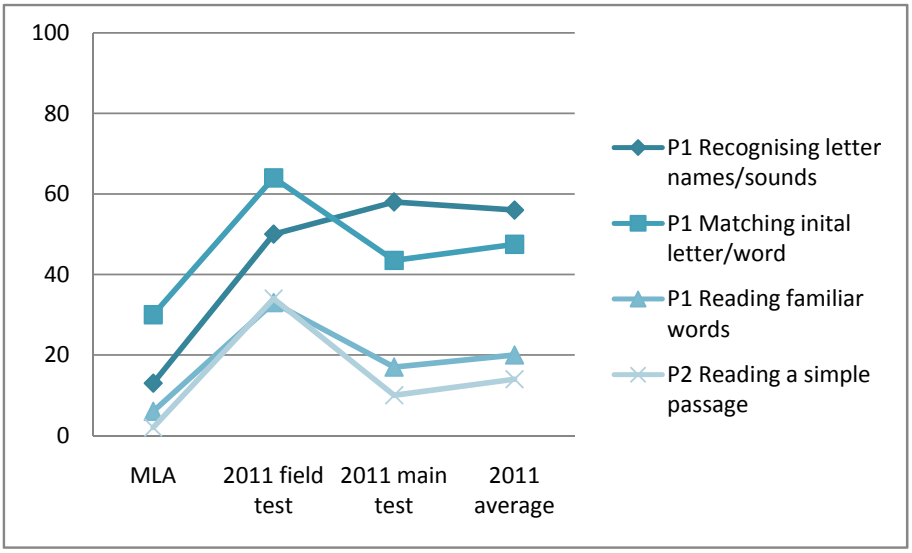
39. On the **P2 questions** (correct for stage) the pattern is slightly more fragmented, although again there is an improvement in achievement levels in **nearly all** test items. Exceptions

are: listening comprehension (2% points lower); writing answers to oral questions (quite substantially lower); and completely inexplicably, farewell greetings.

An analysis of progress within the areas of literacy learning: **reading**

40. Reading (and early reading skills) was a particular concern identified by the 2010 MLA. The Kwara programme has a strong focus on the identification of letter name/sounds, and the ability to match the initial letter to a word. For these two key areas, the basic building blocks of reading, results have improved significantly.

Chart 3: Primary 2 - comparing % scores for key early reading skills (P1 and P2 questions)

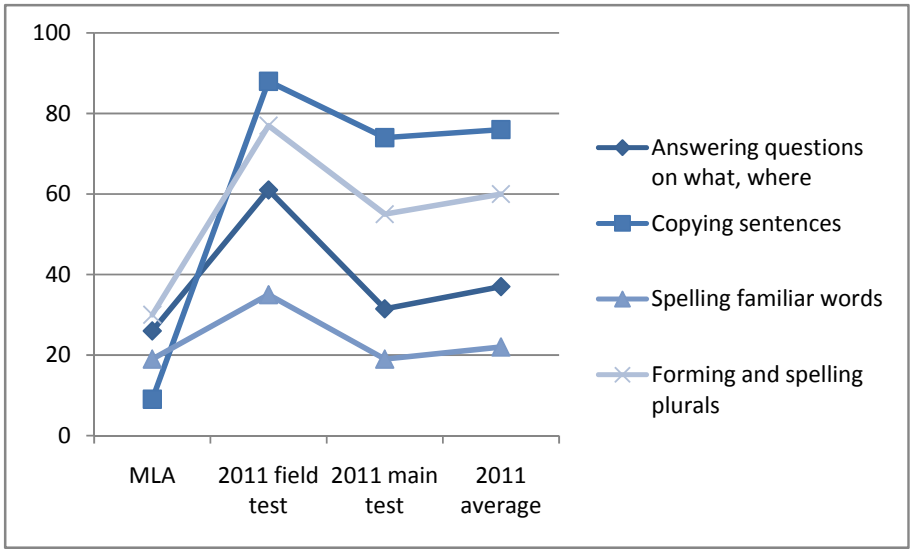


41. This important achievement does not yet seem to have been capitalised on. The P1 level reading question assessed pupils' capacity to read familiar words while the P2 level reading question required pupils to read a short passage. The 2011 results for questions at both levels remain rather low, although they both represent a considerable improvement on the very low base MLA scores.

An analysis of progress within other areas of literacy learning

42. Although results of 14 out of the 18 test items showed an improvement, when results are grouped by areas of literacy learning (speaking and learning, writing etc) no clear pattern emerges. A more fruitful approach might be to look at questions which test improvement in the focus areas of the P2 lesson plans. Pupils who have been well taught using the P2 lesson plans could reasonably be expected to score well on questions 8 and 9 (forming and writing plurals), question 10 (answering questions using what and where), 15 (copying simple sentences – sentence structure) and 16 (spelling familiar words). There is improvement on all these questions, although the level of improvement is extremely variable (see chart 4).

Chart 4: Comparing Primary 2 - % correct scores for focus areas from the P2 literacy lesson plans



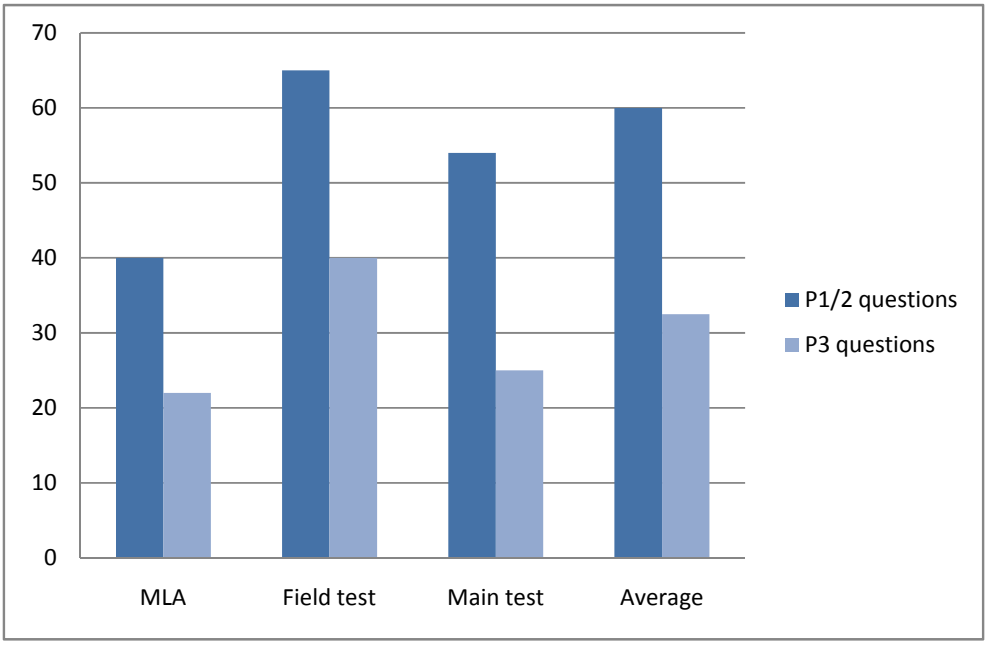
A discussion of Primary 3 literacy results (new Primary 4 pupils)

43. Although this is not a direct comparison, the MLA report states that "in general, students at the end of class 4, in Southern public schools and in private schools [this includes the Kwara schools assessed in 2011 can handle English at the class 1 and 2 level, except in reading. Students definitely need far more reading practice. "

44. As with the P2 test, the 2011 assessment shows clear evidence of overall improvement against the equivalent MLA results. The degree of improvement is in fact somewhat greater than with the P2 results.

45. However, the pattern of results is very different from those of P2. The P2 results show little difference between the scores on the P1 and P2 tests (correct for grade), for both the MLA and the 2011 assessment. In the P3 MLA there was no difference between results of the P1 and P2 test, whilst the aggregate 2011 P3 test only had a difference of around 5%. For the P3 scores, however, there is a much greater difference between the scores on the P1/2 questions and those that are correct for grade, and this is the case for both the MLA and 2011 tests. This is clearly demonstrated in Chart 5. It is possible that this represents the point at which progression really becomes an issue.

Chart 5: Primary 3 - % correct responses – literacy in English (new P4 pupils)



46. On the **P1/2 questions**, the percentage scores (averaging the field and main tests) were higher in 2011 than in 2010 on **every** test item with the exception of the question on using the continuous present tense for which the score remained the same (see Annex 2 for details).

47. On the **P3 questions** (correct for stage) the results were extremely variable, with only 6 out of the 10 test items showing improvement. Exceptions do not seem to fall into any specific area of learning, although the higher order reading skills seem to be a problem area, despite the high level of improvement shown by the same pupils with the reading test items at P1/2 level.

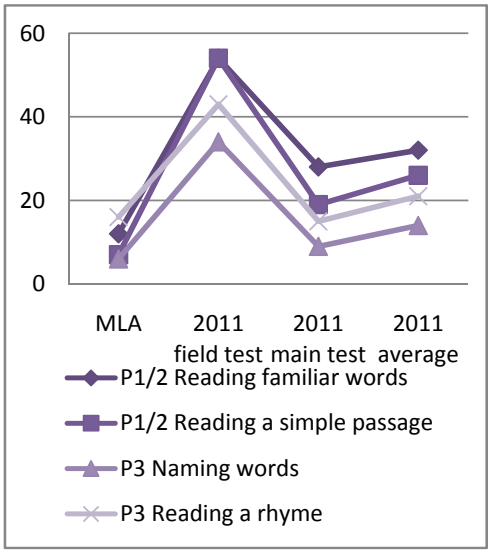
An analysis of progress within the areas of literacy learning: **reading**

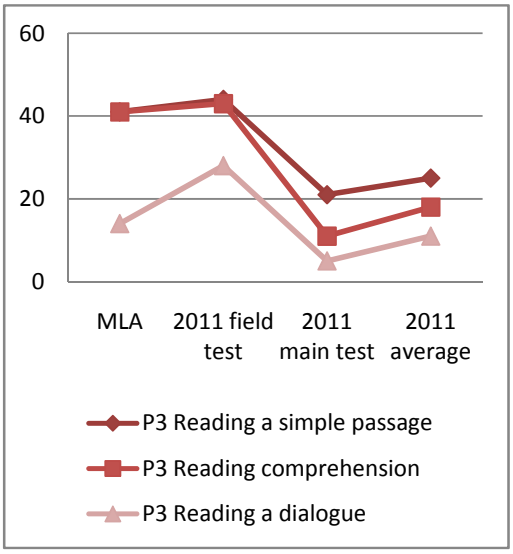
48. Reading continued to be a particular concern identified by the 2010 MLA.

49. Interpreting the reading test item scores for the newly promoted P4 pupils is not straightforward. There is some evidence from the 2011 study of continuing improvement with the key foundations of reading (the P1/2 questions), but although the scores are higher than the results of the MLA they are still disappointingly low considering they are testing content which is from over a year below the pupils' present grade. There is also some improvement on two out of the five test items which are correct for grade (P3), but from a very low baseline. "Reading a simple passage" shows a dramatic downturn on the baseline score. This is confusing - the MLA score seems surprisingly high at over 40% (particularly as the same pupils scored less than 10% reading a P1/2 passage). Whatever the reason for this anomaly is, scores for these three test items (including the important

skill of reading for comprehension) remain very low. Although there is evidence of overall improvement there is clearly a long way to go before pupils have strong reading skills.

Chart 6: Comparing P3 % scores for reading skills





Numeracy

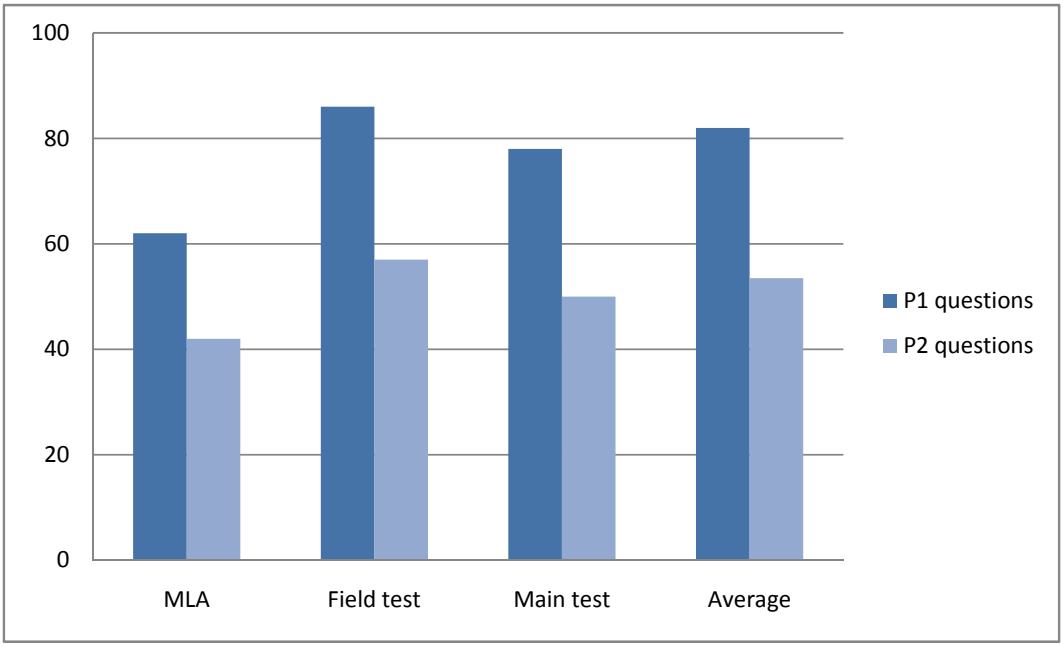
A discussion of Primary 2 numeracy results (new Primary 3 pupils)

50. The 2010 MLA report concluded that "it is clear students are not gaining the foundation in Mathematics expected by the end of class 2." Basic numeracy was found to be of particular concern with pupils unable to conceptualise number adequately.

51. Compared with the P2 literacy in English scores, the P2 numeracy scores are higher overall for both the MLA and 2011 tests.

52. By 2011 the overall levels of achievement have improved. The equivalent MLA results show that pupils responded correctly to approximately 60% of the P1 questions and 40% of the P2 questions; whilst for the aggregated scores for the 2011 study the results were just over 80% and 50% respectively. Progression levels are not as high as with the corresponding literacy tests.

Chart 7: Primary 2 - % correct responses – numeracy (new P3 pupils)



53. For the **P1 questions,** the percentage scores (averaging the field and main tests) were higher in 2011 than in 2009 on **every** test item (dramatically higher for some items).

54. For the **P2 questions**, the percentage scores were higher for all but two test items; counting (within one percentage point of the MLA score in the only test item which the MLA classified as not being below expectations); and using money (down from 26 to 20%). See Annex 2 for details.

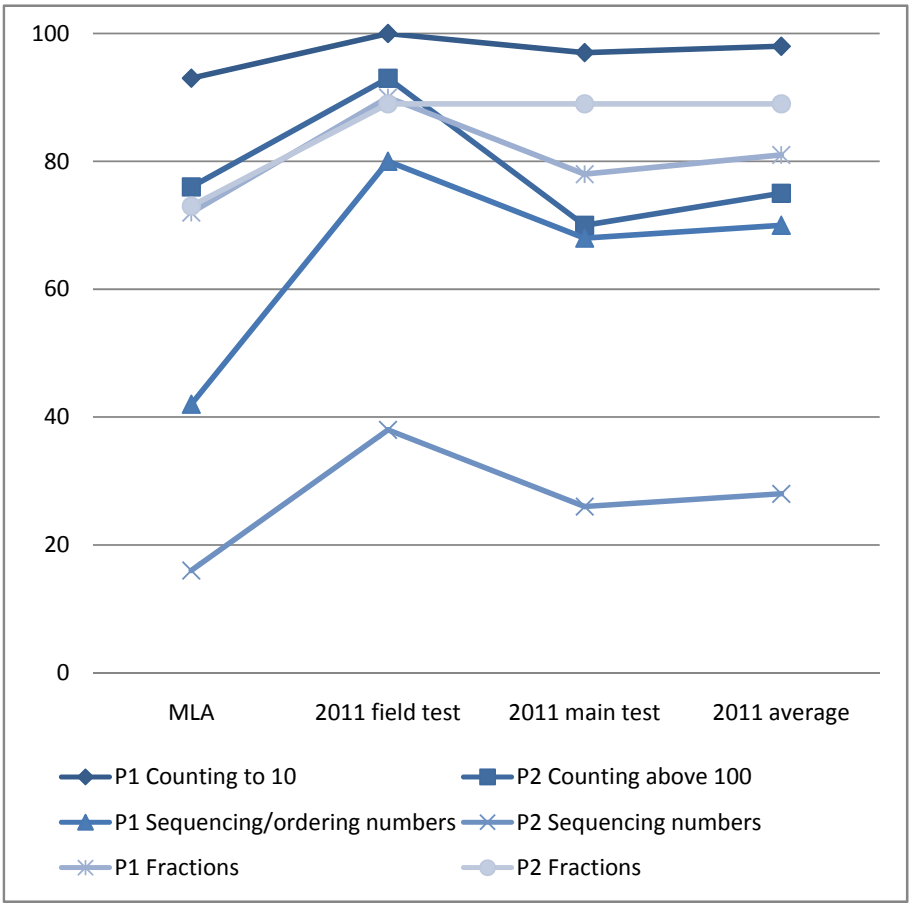
An analysis of progress within the areas of numeracy development: number concepts and basic number operations

55. The 2010 MLA report signalled considerable concern about the basic building blocks of numeracy, and we will begin by looking at this. The report stated that, with the exception of counting, achievement in the key foundation areas of number concepts and basic number operations was "generally below expectations..... Students exhibited surprising difficulty with simple addition and subtraction. The numbers seem to be abstractions for the students having little association with one another. Generally, a difficult area in mathematics is related to number sequencing, or inserting a missing number."

56. The Kwara lesson plans have attempted to address this through the introduction of well structured, enjoyable daily maths lessons lasting one hour, with an element of each lesson being devoted to the basics of numeracy. The use of number lines has been systematically introduced with regular practice. Lesson plans also focus on number patterns and games. The lesson plans have concentrated on increasing pupils' active engagement in their own learning. Pupils are encouraged to try each sum themselves or in pairs or groups, replacing

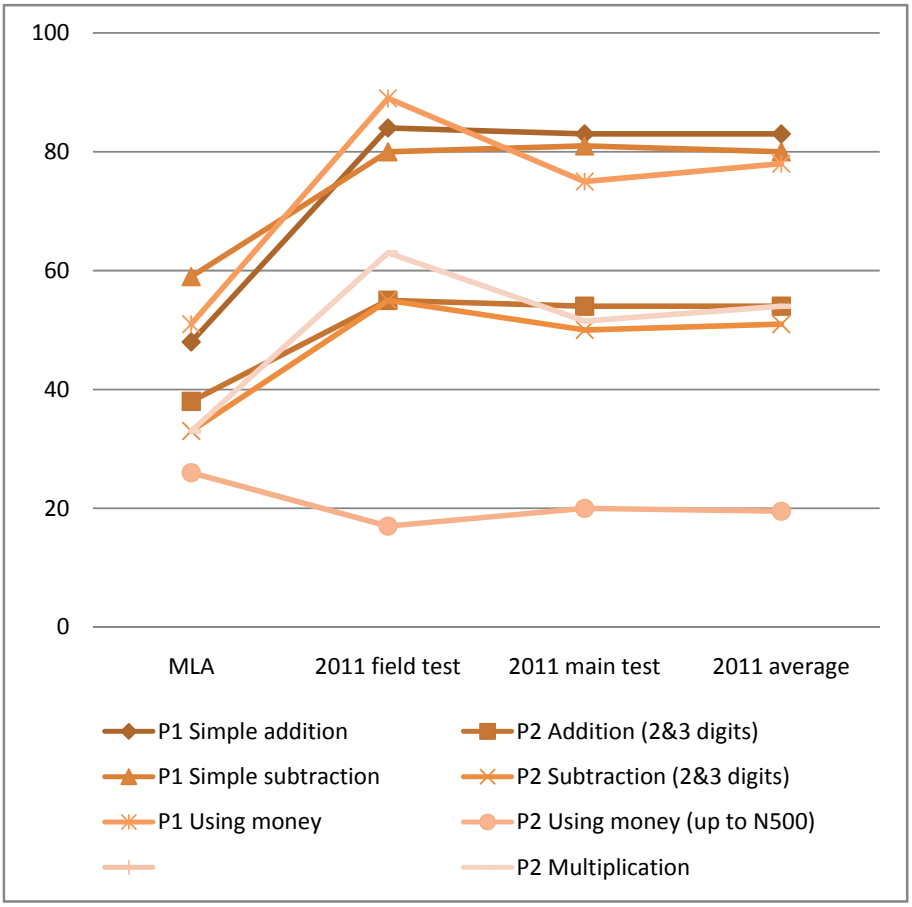
the previous default teaching approach where the class watch the teacher, or at best one child work through a sum on the board. We would therefore realistically expect to see improvement in both these key areas – number concepts and basic operations - and indeed the following charts show that this has happened.

Chart 8: Comparing % scores for key early numeracy skills in P2 - number concepts (P1 and 2 questions)



57. One area within the broader category of number concepts where pupils experienced some difficulty is with sequencing at P2 curriculum level, where the improvement is relatively small despite a huge improvement on the P1 question. One possible reason for this is that the question was presented in an unfamiliar way. This might indicate that pupils (and possibly teachers!) are not yet secure enough in their understanding of number to use this understanding in a different context.

Chart 9: Comparing % scores for key early numeracy skills in P2 – basic number operations (P1 and 2 questions)

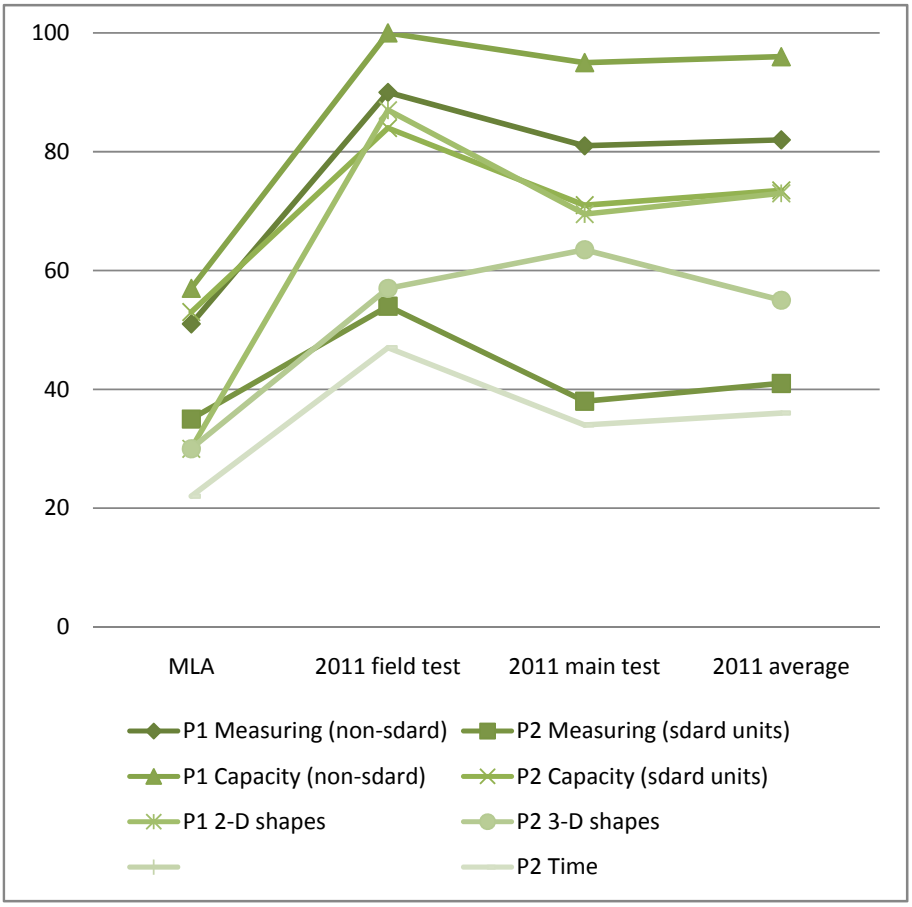


An analysis of progress within the areas of numeracy development: maths topic areas

58. With regard to the maths topics areas, the MLA assessment found that "students are generally weaker than expected in any form of measurement", and suggests that they need to do more practical work in these areas; using standard and non-standard measures and having the opportunity to handle real materials. The Kwara lesson plans try to ensure that these areas of the maths curriculum receive adequate amounts of time and attention and give extremely clear directions to the teachers on to how to introduce these topics to young learners. Materials for each individual lesson are clearly listed and teachers also learn how to improvise materials, as well as **why** children need concrete experience in order to learn.

59. Pupils who have been well taught using the P2 lesson plans could reasonably be expected to perform well in all these topic areas, and the graph confirms that this is indeed the case.

Chart 10: Comparing % scores for key early numeracy skills in P2 – maths topics (P1 and 2 questions)



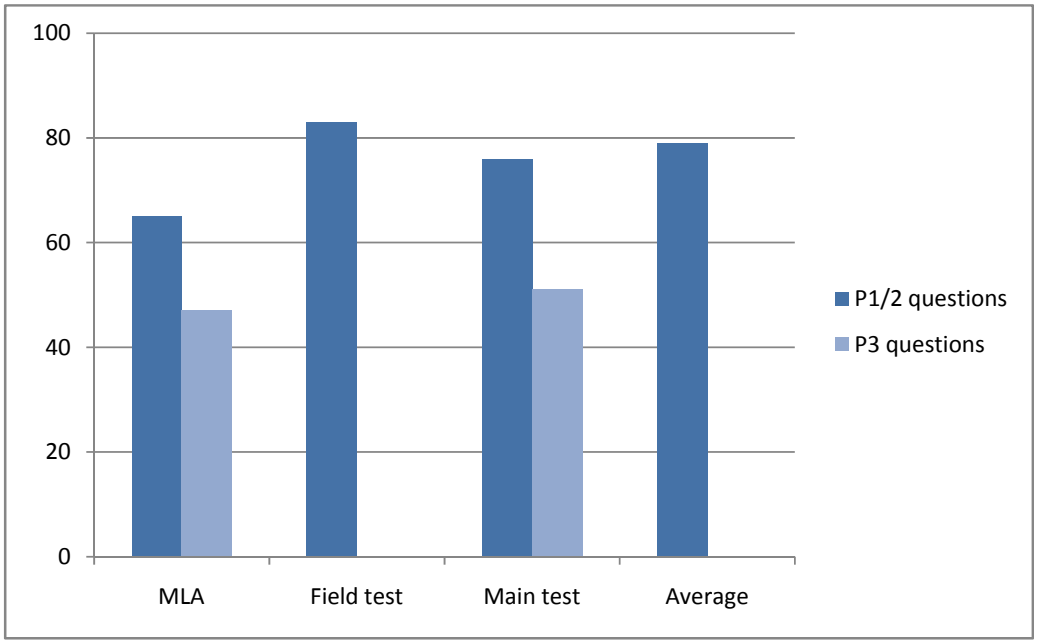
A discussion of Primary 3 numeracy results (new Primary 4 pupils)

60. The situation in 2010 as described in the MLA report on its P4 assessment indicated that "in the Southern public schools [this includes the Kwara schools] students are able to cope somewhat with addition and the use of graphs, but still struggle with subtraction, the LCM concept and applications of mathematics to measurement, quantity, area and shape. Students seem not to be conversant with the practical use of Mathematics and this includes transactions with money."

61. Due to a problem with printing the pupil answer books for the field test, the test was stopped after Question 16, so there is no complete dataset for the field test. This has had the result of slightly depressing the overall averages. Even so, there is evidence of an overall improvement against the MLA results, although the level of improvement is not as high as with the other sets of results (and remembering that this is not as direct a comparison as with P2). Pupils responded correctly to 76% of the P1/2 questions (65% in the MLA) and to 51% of the P3 questions, just up from 47%.

62. P3 numeracy scores are higher overall than the P3 literacy scores, for both the (nearest equivalent) MLA and 2011 tests.

Chart 11: Primary 3 - % correct responses – numeracy (new P4 pupils)



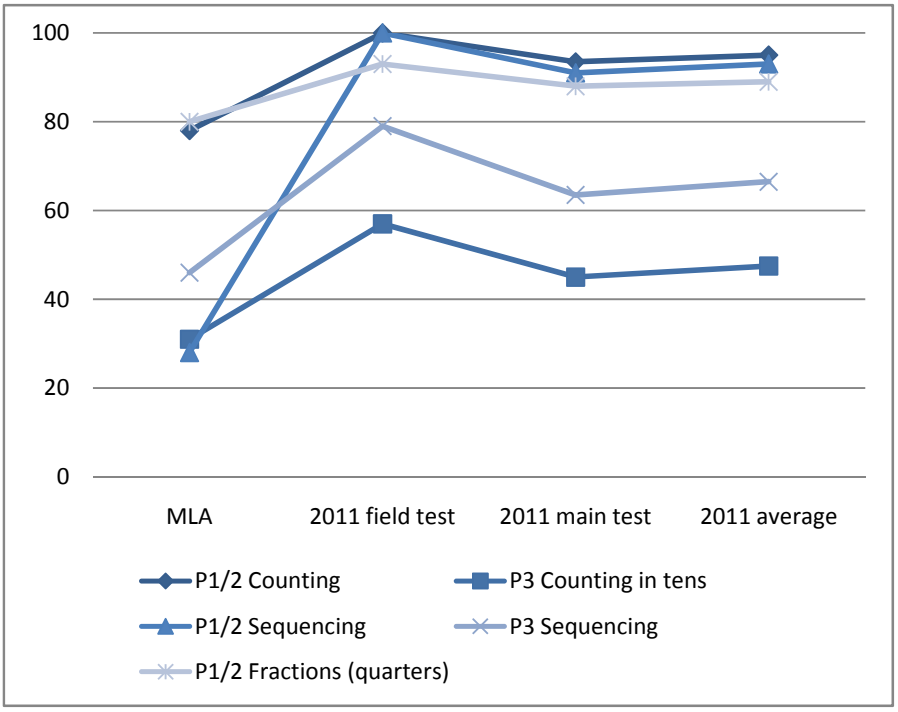
63. For the **P1/2 questions** the percentage scores (averaging the field and main tests) were higher in 2011 than in 2009 in **every** test item.

64. For the **P3 questions** (main test scores only) the situation is more complex and is discussed below under the different areas of maths learning. See Annex 2 for details.

An analysis of progress within the areas of numeracy development

65. Pupils just entering Primary 4 continue to show a considerable improvement on all test items, from the P1/2 and the P3 curricula, relating to **conceptualising number**. There is a mastery level averaging just over 90%, up from 62%, for the three test items at P1/2 level whilst the averaged figures for the two P3 test items show an increase from 38% to 57%. Particularly noteworthy is the improvement in the ability to sequence number (especially at P1/2 level, up from 28% to 93%), an area identified in the MLA report as being of great concern.

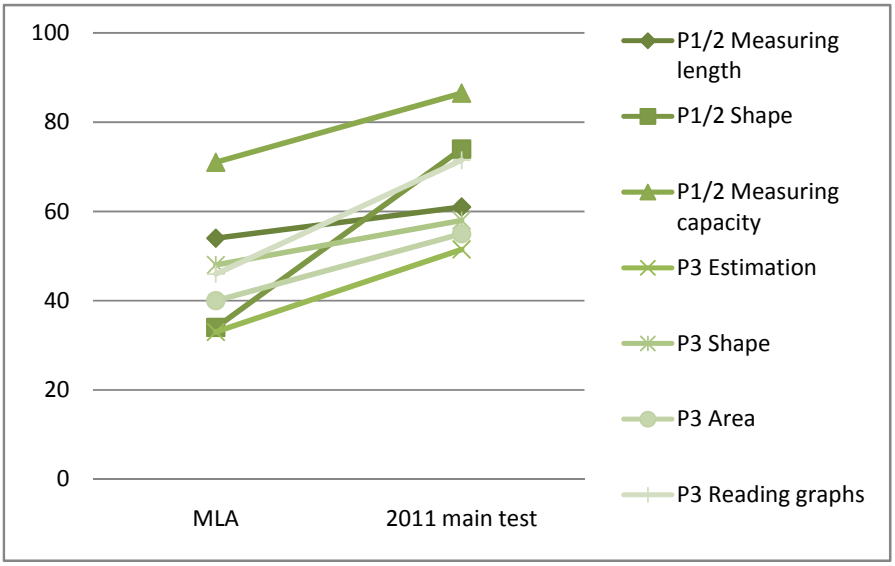
Chart 12: Comparing % scores for key early numeracy skills in P3 - number concepts (P1/2 and P3 questions)



66. The results for **maths topics work** continue this positive trend. There are increases in every test item at both P1/2 and P3 levels, although the improvement is less marked for the P3 questions.

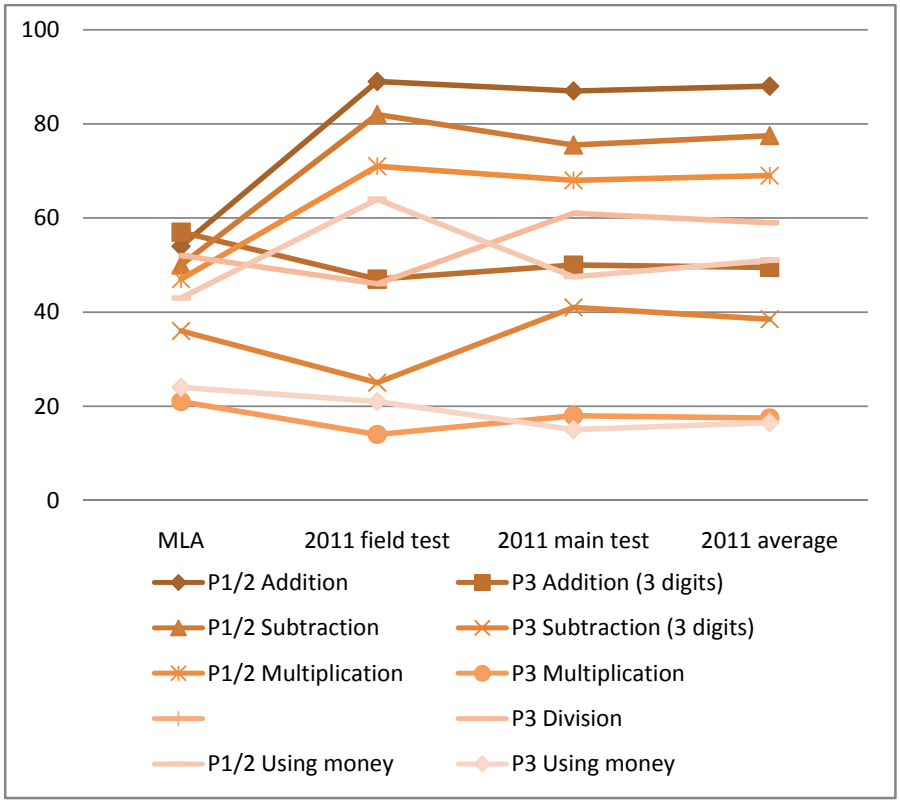
67. Despite the slowing down in the rate of improvement, there is still cause for optimism. These topics are covered in the P3 lesson plans as well as the P2 plans and so one might expect similar levels of improvement. However because of the way that they have been developed and introduced, the pupils have had only one year exposure to them and so have not benefited from improved teaching at foundation level. Obviously this becomes increasingly problematic as one progresses up the grades and should correct itself over time as the pupils are introduced to stronger teaching approaches from P1 onwards. Despite this "foundation gap", improvement is still slightly up – possibly because of a general improvement in pedagogy and a greater sense of purpose in the classroom resulting from teacher participation in the literacy and numeracy programme.

Chart 13: Comparing % scores for key early numeracy skills in P3 – maths topic work



68. Unfortunately results in the key skill area of **number operations** are not so positive. Results for the three test items at P1/2 level all show improvement. At P3 level, however, only in two out of the five areas tested (subtraction, and division) show any sign of improvement. It is not clear what has caused this particular pattern.

Chart 14: Comparing % scores for key early numeracy skills in P3 – number operations



69. The results for using money, in particular, show a decline, from an already low base of 24% correct answers to 16.5%. This could be because the test takes an unfamiliar form; pupils are asked to work through a money problem involving addition and subtraction, both halves of which they could do. However they are not secure enough to apply their learning within a problem solving context.

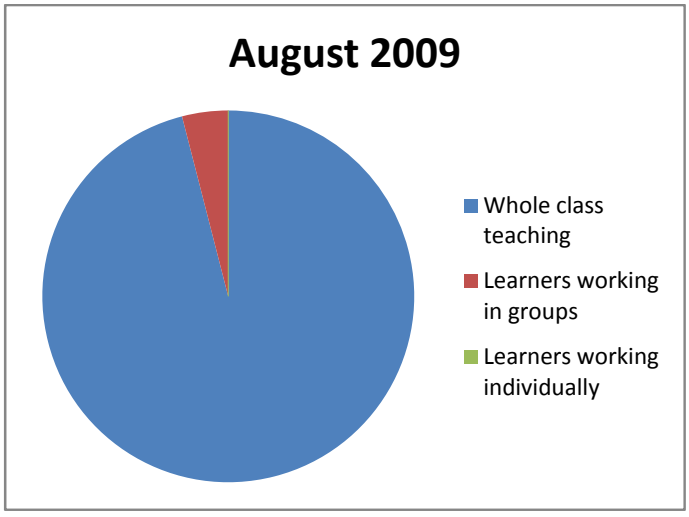
Classroom observation study

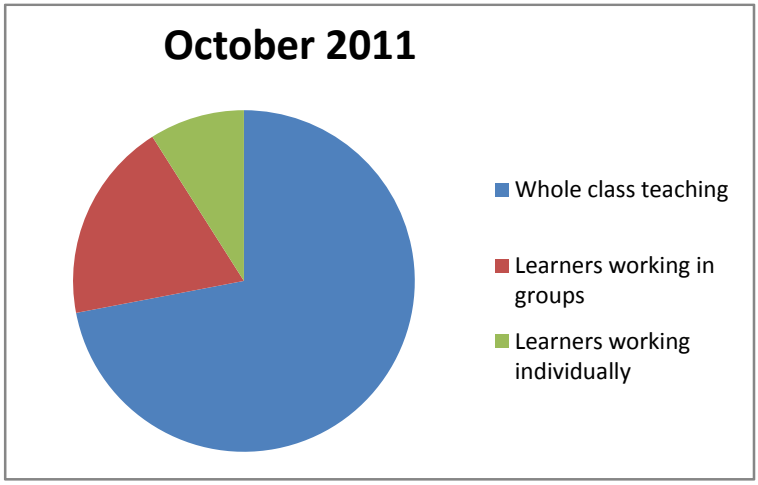
70. The findings from the classroom observation study are shown in the charts below, with greater detail provided in the tables in Annex 3. What the tables show is that classrooms are beginning to change: in the way that they are organised; in the way that teachers and pupils interact; and in the way that activities take place. The changes may appear to be small but they are significant, particularly given the competency levels of Kwara teachers as illustrated in the Kwara TDNA.

Classroom organisation

71. While classrooms are still largely organised for whole class teaching there has been a significant move to organising classrooms for more group work and to a lesser extent for more individual work. This reflects work on improving generic teaching skills (and is modelled during the teacher workshops) and is reinforced in every lesson plan, which makes clear which type of classroom organisation is appropriate for each of the different parts of the lesson.

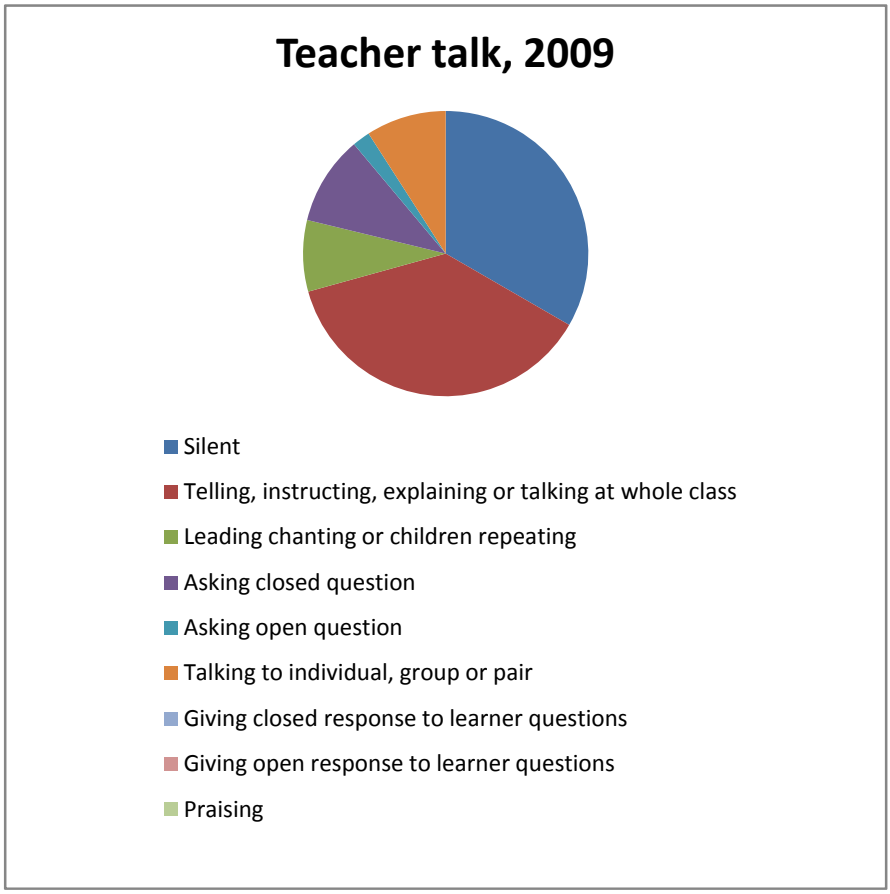
Chart 15: A comparison of classroom organisation between 2009 and 2011; the amount of time in an average lesson that each of the three main types of organisation is employed by the teacher

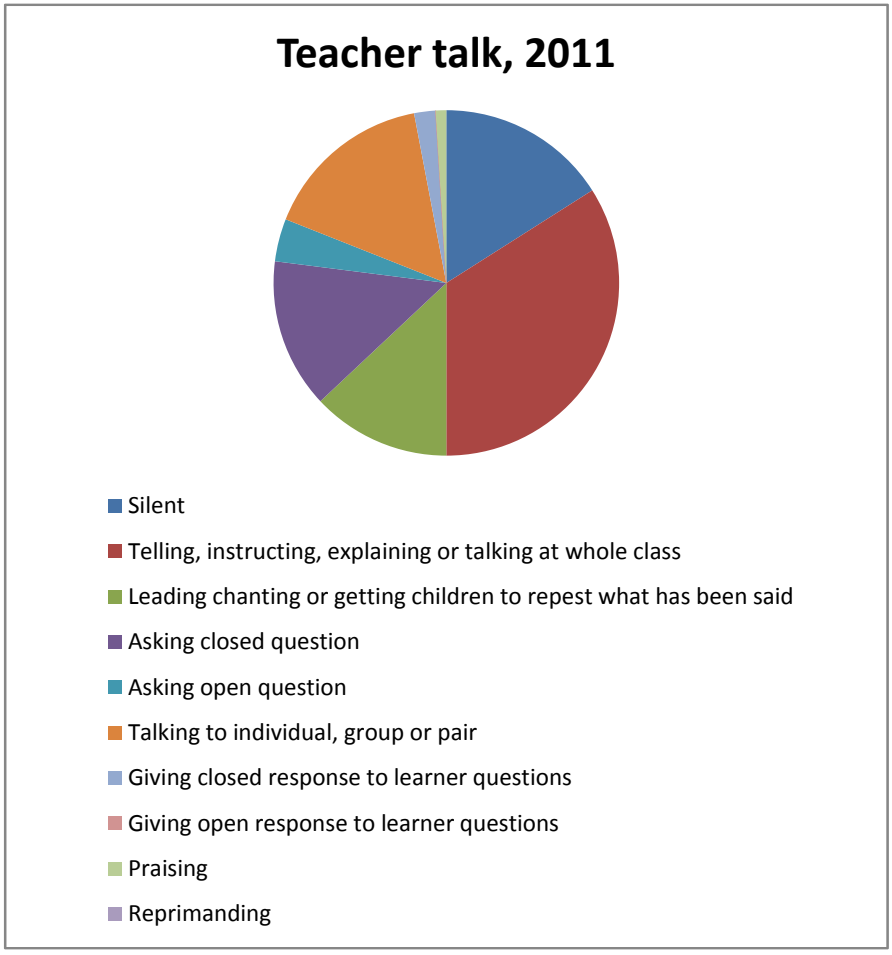




Teacher and learner talking

72. Both teachers and learners are talking more – learners significantly more. Positive types of interaction between teachers and learners have increased and there is less of a tendency to treat pupils as passive recipients of knowledge and to actively involve them more in their learning. Again this reflects generic work with teachers to improve their understanding of questioning. Pupils are also talking with each other as more time is spent working in groups or in pair work (as encouraged through the lesson plans).





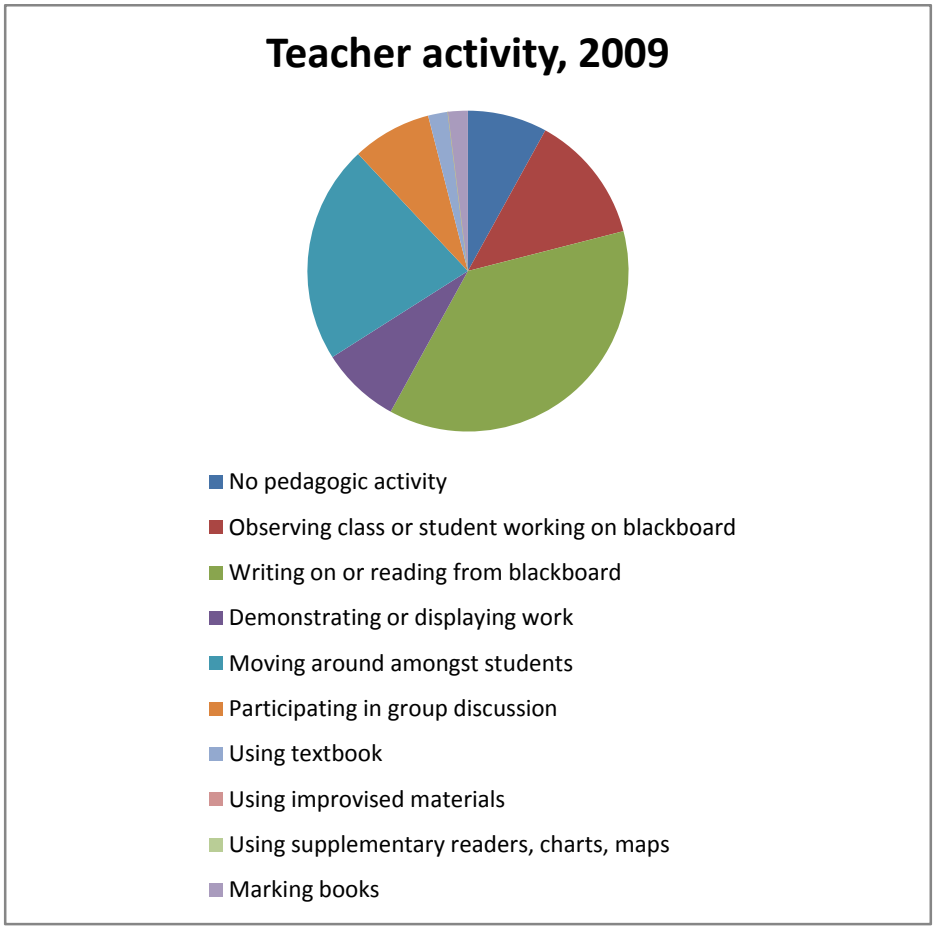
Teacher and learner activity

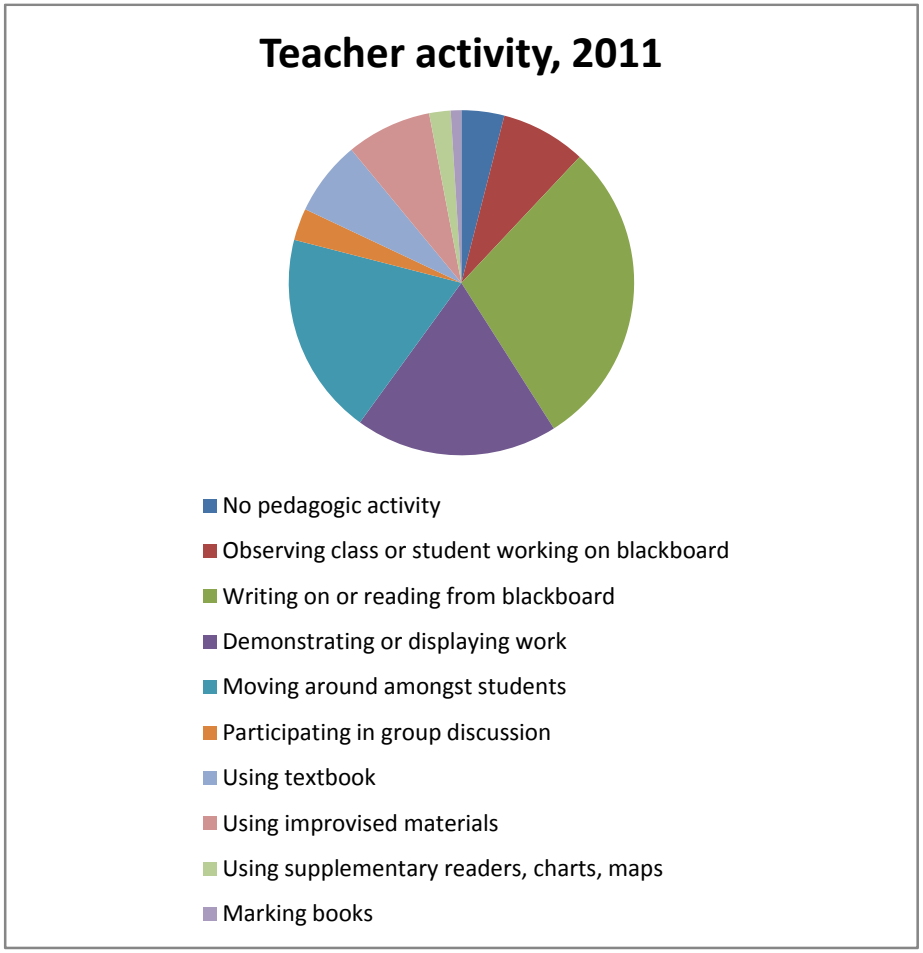
73. The amount of time spent on blackboard work, both by teacher and pupil, is falling with the teacher spending more time demonstrating activities/skills to pupils. This reflects a major push in the lesson plans to involve pupils more actively in their learning (with all pupils working out sums etc, either individually or in groups, rather than watching the teacher or one pupil working things out on the board). Improving blackboard work is also one of the topics covered in the generic teaching skills work.

74. Teachers have been introduced to the principles of how children learn and how to adapt their teaching so as to support pupil learning and so they understand the role of teaching aids and concrete materials. They are also encouraged to make simple materials and well written charts during cluster based workshops.

75. There is a marked increase by teachers in the use of teaching aids (the lesson plans make it clear what simple materials need to be prepared by the teacher before the lesson) and in the use of textbooks (ESSPIN has encouraged Kwara SUBEB to ensure English and mathematics textbooks are available in all classrooms).

76. There are also beginning signs that teachers are engaging in more positive interaction with pupils as demonstrated by pupils being involved in discussion, presentation and in writing in their own words.





Conclusions and next steps

77. The results of this evaluation indicate that there has been considerable improvement in levels of achievement in both literacy and numeracy and in both grades assessed. We should however acknowledge at this stage that:

- the sample size was small
- teachers and pupils have not yet been exposed to the whole three year lesson plan programme. In particular pupils newly promoted to P4 were only taught using the lesson plans during P3 and therefore lack the grounding in phonics and number conservation introduced in P1 (and P2). It is difficult to assess the effect of the P3 plans under these circumstances
- it is difficult to attribute an observed change (in levels of achievement) to a specific input (the literacy and numeracy programme), within a process as organic as school improvement. Work to improve generic teaching skills and ensure that teachers understand and apply the basic principles of how children, and work to improve the way that schools are led and managed, and even more significantly supported by a

reinvigorated LGEA advisory service are likely also to have had an impact, as is the hard to quantify, but massively significant, increased sense of purpose within schools and classrooms that has resulted from being part of a comprehensive, integrated reform agenda.

78. Despite these caveats this report largely endorses ESSPIN's approach. There is across the board improvement and particular success with the building blocks of literacy and numeracy, but the higher order skills of reading remain a problem. There is concern that the good improvement with letter sounds is not yet translating into reading familiar words, or simple passages, or to reading with comprehension. This could be because the pupils tested did not have the necessary foundations – in which case no particular remedial action is needed. A further follow up assessment would explore whether or not progress continues to be made.

79. Although this is undoubtedly part of the problem, it is unlikely to be the whole story. The teachers might still be having problems with understanding literacy and literacy teaching. The Quality Team is already looking at ways, beginning with the SSIT, of strengthening how the lesson plans are delivered at classroom level, and a short study of how teachers manage the "reading" sections of the literacy lesson plans (in particular) might help to further strengthen this work.

80. In addition to considering conducting a further follow up assessment shorter targeted assessments of progress with the teaching of reading could be considered. These could be conducted by the SSIT as part of their routine professional development.

Annex 1: Learning achievement overall averages

P2 Overall averages for literacy in English for new P3 pupils

(Based on frequency of correct responses for curriculum topics for literacy in English)

	MLA 2009	Field trial	Main assessment
Pupils responding correctly to P2 questions	38%	61%	36%
Pupils responding correctly to P1 questions	38%	65%	46%

P3 Overall averages in literacy in English for new P4 pupils

	MLA 2009	Field trial	Main assessment
Pupils responding correctly to P3 questions	22%	40%	25%
Pupils responding correctly to P1/2 questions	40%	65%	54%

P2 Overall averages in numeracy for new P3 pupils

	MLA 2009	Field trial	Main assessment
Pupils responding correctly to P2 questions	42%	57%	50%
Pupils responding correctly to P1 questions	62%	86%	78%

P3 Overall averages in maths for new P4 pupils

	MLA 2009	Field trial	Main assessment
Pupils responding correctly to P3 questions	47%		51%
Pupils responding correctly to P1/2 questions	65%	83%	76%

Annex 2: Analysis by individual test items

Literacy in English

P2: New P3 (P1 questions)

Topic	MLA			Field test			Main test			Average			Q no MLA	Q no 2011
	B	G	all	B	G	all	B	G	all	B	G	all		
Greeting	77	82	80	80	89	86	90	100	95	88	97	92	1.1	1
Answering oral questions	44	42	43	80 80	72 67	74 71	60 37	66 38	63 37.5	51 42	69 37	60 39	1.2 1.6	2 6
Letter name/sounds	11	16	13			50			58			56	1.3	3
Reading familiar words	10	1	6			33			17			20	1.4	4
Oral response from statement	21	20	21	50	67	60	20	25	22.5	24	34	29	1.5	5
Matching initial letter/word	34	26	30	40	78	64	40	47	43.5	40	54	47.5	1.7	7

P2: New P3 (P2 questions)

Topic	MLA			Field test			Main test			Average			Q no MLA	Q no 2011
	B	G	all	B	G	all	B	G	all	B	G	all		
Using plurals				80	78	79	55	55	55	59	60	60	2.2	8
Spelling plurals				50	89	75	50	59	55	50	66	59	2.2	9
Combined plural work	35	25	30							54.5	63	59.5	2.2	8&9
Answering questions on what, where	22	31	26	50	67	61	33	30	31.5	35	38.5	37	2.3	10
Listening comprehension	27	26	27	40	67	57.5	15	18.5	17	18.5	33	25	2.4	11
Using present continuous tense	34	39	36	50	72.5	64.5	35	32	33.5	37	41	39	2.5	12
Reading simple passage	2	1	2			34			10			14	2.6	13
Writing answers to oral questions	24	29	26	20	44	35	3	10	6	5	17	11	2.7	14
Copy sentences	9	9	9			88			74			76	2.8	15
Spelling familiar words	17	21	19	10	50	35	15	23	19	14	29	22	2.9	16
Farewell greetings	83	89	86	60	89	78	53	70	61	54	74	64	2.11	17

P3: New P4 (P1 and 2 questions)

Topic	MLA			Field test			Main test			Average			Q no MLA	Q no 2011
	B	G	all	B	G	all	B	G	all	B	G	all		
Greetings				71.5	86	78	93	90	91.5	88	89	88.5	1/2.1	1
Answering oral questions	62	63	63	78	93	85	70	73	71.5	71	76	73.5	1/2.2	2
Reading familiar words	14	9	12			54			28			32	1/2.3	3
Creating sentences	37	35	36	64	57	60	65	58.5	61	65	58	61	1/2.4	4
Using plurals	37	34	35	57	71.5	64	63.5	68.5	66	62	69	66	1/2.5	5
Listening comprehension	34	38	36	64	64	64	33	41.5	37	39	48	44	1/2.6	6
Using present continuous tense	48	53	50	57	43	50	48	50	49	50	49	49.5	1/2.7	7
Reading a simple passage	8	6	7			54			19			26	1/2.8	8
Spelling familiar words	24	28	26	71	57	63	25	42	33.5	34	45	39.5	1/2.9	9
Copying sentences	37	38	37			71			80			75.5	1/2.10	10

P3: New P4 (P3 questions)

Topic	MLA			Field test			Main test			Average			Q no MLA	Q no 2011
	B	G	all	B	G	all	B	G	all	B	G	all		
Naming words (pronunciation)	8	4	6			34			9			14	3.2	11
Reading a simple passage	38	44	41			44			21			25	3.3	12
Reading comprehension				50	36	43	5	17	11	14	21	17.5	3.3	13
Use of "should"	25	37	30	57	29	43	33	47	40	38	44	41	3.4	14
Reading a rhyme	15	18	16	43	43	43	13	17	15	19	22	20.5	3.6	15
Reading a dialogue with meaning	13	15	14	43	14	28	0	10	5	8	14	11	3.7	16
Copying sentences	9	13	11			72			75			73.5	3.8	17
Independent sentence writing	22	20	21	29	21.5	25	5	5	5	10	8	9	3.9	18
Writing sentence with punctuation and spelling	12	16	14	43	29	36	7	13	10	14	16	15	3.10	19
Finishing sentences	15	19	17	57	29	43	35	31.5	33	39	31	35	3.11	20

Mathematics

P2: New P3 (P1 questions)

Topic	MLA			Field test			Main test			Average			Q no MLA	Q no 2011
	B	G	all	B	G	all	B	G	all	B	G	all		
Counting to 10	91	94	93	100	100	100	100	93	97	100	94	98	1.2	1
Sequencing/ ordering numbers	41	43	42	67	100	80	67	68	68	67	73	70	1.3	2
Fractions – halves and quarters	75	68	72	89	92	90	82	74	78	84	77	81	1.4	3
Addition of 1 and 2 digit numbers	48	47	48	81	88	84	84	82	83	83	83	83	1.5	4
Subtraction of numbers less than 20	60	58	59	78	83	80	81	80	81	80	81	80	1.6	5
Using money	52	50	51	82	100	89	79	71	75	80	76	78	1.7	6
Measurement (non standard units)	59	44	51	89	92	90	85	74	81	86	77	82	1.8	7
Comparing capacity	59	55	57	100	100	100	97	93	95	98	94	96	1.9	8
Shape (2-D)	28	32	30	89	84	87	70	69	69.5	74	72	73	1.10	9

P2: New P3 (P2 questions)

Topic	MLA			Field test			Main test			Average			Q no MLA	Q no 2011
	B	G	all	B	G	all	B	G	all	B	G	all		
Counting (100+)	76	77	76	89	100	93	77	63	70	80	69	75	2.1	10
Sequencing	19	14	16	26	56	38	29	23	26	28	29	28	2.2	11
Fractions (three quarters and thirds)	74	72	73	82	100	89	92	87	89	90	89	89	2.3	12
Addition (2 & 3 digits)	37	40	38	37	83	55	61	46	54	55	53	54	2.4	13
Subtraction (2 & 3 digits)	30	37	33	44	72	55	60	39	50	56	45	51		
Multiplication	30	37	33	55	75	63	63	40	51.5	61	46	54	2.5	14
Using money (up to N500)	26	26	26	6	34	17	27	13.5	20	22	17	19.5	2.6	15
Measurement (m, cms)	35	35	35	50	59	54	40	35	38	42	39	41	2.7	16
Comparing quantity (standard units)	54	53	53	84	83	84	74	68	71	76	71	73.5	2.8	17
Time (hour and half hour)	25	19	22	51	42	47	40	28	34	42.5	30	36	2.9	18
Shape (3-D)	33	28	30	62	50	57	69	58	63.5	67	55	62	2.10	19

P3: New P4 (P1 and 2 questions)

Topic and **grade**	MLA			Field test			Main test			Average			Q no MLA	Q no 2011
	B	G	all	B	G	all	B	G	all	B	G	all		
Counting **1&2**	80	74	78	100	100	100	97	90	93.5	98	91	95	1/2.2	1
Sequencing **1&2**	24	33	28	100	100	100	90	92	91	93	93	93	1/2.3	2
Fractions (1/4s and 3/4s) **1&2**	80	80	80	100	75	93	83	92	88	87	90	89	1/2.4	3
Addition (1 & 2 digits) **1&2**	53	55	54	100	62.5	89	82	92	87	87	89	88	1/2.5	4
Subtraction (1 & 2 digits) **1&2**	52	47	50	85	75	82	75	77	75.5	78	77	77.5	1/2.6	5
Multiplication **2**	48	46	47	70	75	71	66.5	70	68	67	71	69	1/2.7	6
Using money **1&2**	42	45	43	65	62.5	64	50	45	47.5	54	47	51	1/2.8	7
Measuring length **1&2**	59	47	54	70	37.5	61	65	57	61	66	55	61	1/2.9	8
Measuring capacity **1&2**	70	71	71	100	75	93	89	84	86.5	92	83	87.5	1/2.10	9
Shape (2 and 3-D) **1&2**	35	33	34	80	50	71	82	74	78	81,5	71	76	1/2.12	10

P3: New P4 (P3 questions)

Topic	MLA			Field test			Main test			Average			Q no MLA	Q no 2011
	B	G	all	B	G	all	B	G	all	B	G	all		
Counting in tens	33	29	31	70	25	57	40	50	45	48	47	47.5	3.1	11
Sequencing	49	42	46	90	50	79	58	69	63.5	66	67	66.5	3.2	12
Addition (3 digits)	54	59	57	50	38	47	50	50	50	50	49	49.5	3.3	13
Subtraction (3 digits)	37	34	36	25	25	25	34	48	41	32	45	38.5		
Multiplication	20	21	21	15	12.5	14	20	16.5	18	19	16	17.5	3.4	14
Division	54	49	52	45	50	46	55	67	61	52.5	65	59	3.5	15
Money (problems)	24	34	24	20	25	21	10	20	15	12.5	20.5	16.5	3.6	16
Estimation	32	34	33				50	53	51.5				3.7	17
Area	38	43	40				43	67	55				3.8	18
Shape	49	48	48				62	53	58				3.11	19
Reading graphs	47	45	46				71.5	71.5	71.5				3.12	20

Annex 3: Distribution of Teacher's Time

Distribution of time by type of classroom organisation, teachers (%)

	Kwara	
Type of organisation	2009	2011
Whole class teaching	96	72
Learners working in groups	4	19
Learners working individually	0	9
Total	100	100

Note: Categories marked with asterisk involve learners in positive interaction

Distribution of lesson time by type of teacher talking (%)

	Kwara	
Type of teacher talking	2009	2011
Silent	33	16
Telling, instructing, explaining or talking at whole class	37	34
Leading chanting or getting children to repeat what has been said	8	13
Asking closed question	10	14
Asking open question *	2	4
Talking to individual, group or pair *	9	16
Giving closed response to learner questions *	0	2
Giving open response to learner question *	0	0
Praising	0	1
Reprimanding	0	0
Total	100	100

Distribution of lesson time by type of teacher activity (%)

	Kwara	
Type of teacher activity	2009	2011
No pedagogic activity	8	4
Observing class or student working on blackboard	13	8
Writing on or reading from blackboard	37	29
Demonstrating or displaying work	8	19
Moving around amongst students	22	19
Participating in group discussion *	8	3
Using textbook *	2	7
Using improvised materials *	0	8
Using supplementary readers, charts, maps *	0	2
Marking books	2	1
Total	100	100

Distribution of time by type of classroom organisation, learners (%)

	Kwara	
Type of organisation	2009	2011
Working as a class – common task	94	63
Working as a class – individual task	5	16
Organised in groups or pairs	1	21
Total	100	100

Distribution of lesson time by type of learner talking (%)

	Kwara	
Type of learner talking	2009	2011
Silent	67	24
Chanting or repeating what teacher has said	13	22
Answering teacher (closed question)	15	33
Answering teacher (open question) *	3	7
Questioning teacher to clarify task *	0	2
Talking in groups or pairs about the lesson *	2	8
Reporting results of group discussion *	0	2
Chattering	0	2
Total	100	100

Distribution of lesson time by type of learner activity (%)

	Kwara	
Type of teacher activity	2009	2011i
Copying from blackboard	8	4
Listening to teacher or (learner working on blackboard)	47	31
Reading from textbook or other material	9	14
Doing exercise set by teacher	21	24
Doing exercises or mathematics activities *	9	12
Writing in own words *	0	2
Group discussion *	0	2
Group presentation *	0	4
Singing, dancing, drawing, making things	1	3
No activity	4	4
Total	100	100