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An Assessment of the Development Needs of Teachers in Nigeria - Kwara State Case Study

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Distribution List

Name	Position
Bolaji Abdullhai	Honorable Commissioner for Education, State Ministry of Education, Science and Technology (MOEST), Kwara
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Rob Shooter	Human Development Programme Coordinator, DFID
Ian Attfield	Education Adviser, DFID, Northern Nigeria Office
Lilian Breakell	State Team Leader, Kwara
Emma Williams	Acting State Team Leader
John Kay	Lead Specialist, Education Quality ESSPIN
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Note on Documentary Series

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The documents include:

ESSPIN 001	ESSPIN 1st Quarterly Report
ESSPIN 002	MTSS Strategy
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ESSPIN 504	Communication Task Specialist Visit Report Feb. 09
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Given the scale of the task, each consultant took responsibility for different aspects of the study as follows:

David Johnson, for test construction, training markers, data analysis and compilation of the report

Sergij Gabrscek, for piloting of tests, test paper layout, the compilation of test booklets, and the logistical arrangements for the marking of the tests; and for the compilation of the data base, and first level data analysis.

Both consultants were ably assisted in these tasks by the Ministry of Education task team named above.

As is often the case, the final written report of a study, masks the Herculean efforts and sacrifices made by those involved in its implementation. The contributions of Sergij Gabrscek and the Ministry task team to success of this study cannot be more highly valued.

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Executive summary

1. Evidence from Monitoring Learning Achievement studies carried out in 1996 and 2003 and more recently a study by Johnson, Hsieh and Onibon (2007) on learning outcomes of children in Primary Grades 4 and 6 in Kwara, Kano and Kaduna, shows that Nigerian children consistently underachieve in terms of their numeracy and literacy skills. Many factors contribute to this underachievement, for example lack of textbooks, poor learning environment, over-crowded classrooms and so on but the major factor, if only by inference, is the lack of ability of teachers to deliver the curriculum.

2. The role of teachers has long been recognised as central to the delivery as well as the quality of education. Usually, it has been assumed that the academic and professional training of teachers has a direct and positive bearing on the quality of teaching performance and consequently on the achievement of pupils. Effective teaching is seen as being determined by both subject matter knowledge and pedagogical skills of the teacher (Lockheed, 1993), and both initial teacher training and in-service teacher training provision have been built around developing teachers with a secure content knowledge and who are professionally competent to select from a range of instructional strategies the teaching approach most suited to a particular content area and to their pupils' age and ability.

3. Effective teaching depends on teachers having a basic level of literacy and numeracy, and all teachers would be expected to have reached a minimum capability threshold with regards to their literacy and numeracy skills if they are to be successful in encouraging learning in their classrooms. In order to ascertain whether teachers in Kwara have the basic skills needed to teach, a comprehensive survey was designed to test teachers' basic levels of literacy and numeracy and the application of these skills in everyday teaching and classroom administrative tasks. Over 19,000 teachers (all primary and junior secondary teachers) in the State were tested.

4. Four interrelated tests were developed. The first was a test of basic numerical knowledge needed for the teaching of primary mathematics. The second was a test of basic literacy in English for teaching English as a subject at Primary Grade 6 level. The third was a reading comprehension test in which information was to be extracted and used to develop a lesson plan. The fourth was a test to see how teachers could apply basic numeracy skills to analyse children's learning, for example constructing bar charts, turning raw scores into percentages and disaggregating data.

5. The minimum knowledge and capability threshold model defined for the tests required teachers to have, as a minimum: a basic knowledge of number sufficient to teach the Nigerian Grade 4 primary mathematics syllabus; a basic level of literacy sufficient to teach the Nigerian Grade 4 English language syllabus; the ability to read a variety of simple factual texts and to use the information in lesson planning; and the ability to apply basic numeracy to classroom tests.

6. In order to ascertain the strengths and weaknesses of the teachers in the tests, a profile recognising four bands of achievement was developed. The top band identified those teachers achieving the minimum knowledge and competency threshold. The second band identified those teachers falling just short of the minimum knowledge and competency threshold. The third level identified those teachers falling some way short of the minimum knowledge and competency threshold. The fourth level identified those teachers falling a long way short of the minimum knowledge and competency threshold. Teachers in the top band would be those achieving test scores of 80% and above. Teachers in band two would be those scoring between 60% and 79%. In band three scores would be between 40% and 59%, and those in band four would be teachers whose scores were lower than 40%. Teachers defined as competent would be those achieving scores of 80% and above overall.

7. The test results were startling. Looking at the overall scores, only 0.4% (75 teachers) fell within band one, and achieved the minimum threshold standard, which means that only 75 teachers out of the 19,000 plus teachers tested can be defined competent (and of these, only 7 scored 80% or over in all four tests). Twenty per cent (3814 teachers) fell into band two. Just over 50% (9662 teachers) fell into band three, and 29% (5574 teachers) fell into band four. Two hundred and fifty nine teachers failed to score on the tests. Detailed analysis of the individual test items are given in the body of the report. There were no apparent gender differences in the test scores. Teacher qualification did not affect the scores, with graduate teachers performing no better than teachers with lesser qualifications.

8. The results pose a major challenge for the Kwara State Government if it is to achieve the goals it has set for itself with regards to education. The assessment has provided a starting point for the reform of teacher education, which will need a major and radical over haul from the initial selection of aspirant teachers through changes to pre-service, in-service, professional development and deployment, if the education system is to deliver a service which children and parents deserve. While the assessment is confined to teachers in Kwara State, it has broader implications with regards to the quality of teachers and teaching throughout Nigeria. Major policy reform with regards to teachers

and their training is necessary, and, unless this is done, Nigerian children will continue to under-perform when compared to children in other Sub-Saharan African countries.

Introduction

9. A recent analysis of education in Nigeria (FME, 2007) indicated that although the proportion of qualified teachers to unqualified teachers is not a serious issue, the overall quality of teachers is low:

> *The problem is that the teachers' formal qualifications are likely to be a misleading guide to their competence … Despite the fact that the large majority of teachers are now qualified, … teachers do not have adequate knowledge … Complaints about newly appointed teachers, who have low levels of numeracy and literacy skills as well inadequate knowledge in their chosen areas of subject specialisation, are commonplace. The low quality of graduates from the teacher training colleges and universities who are joining the teaching profession is a major issue.*

10. Indeed, Johnson, Hsieh and Onibon (2007) confirmed that the quality of teaching in Nigeria is very poor. Their study which looked at over 200 lessons taught by Nigerian primary school teachers found that most teachers displayed a poor variety of classroom teaching strategies. Teachers did not use effective strategies to introduce lessons, manage various interactions in the main part of the lesson, or to bring lessons to suitable conclusions.

11. Also, the study found there to be a direct relationship between the poor quality of teaching and poor learning outcomes of the Nigerian educational system. Poor teaching strategies accounted for 25.2% of the variation in class 4 reading accuracy scores and for 28.5% of the variation in class 4 reading comprehension scores. Teaching strategies also accounted for 13.9% of the variation in class 6 reading scores, 14.8% of the variation in class 4 mathematics scores, and 21.7% of the variation in class 6 mathematics scores.

12. Findings such as this suggest that pre-service teacher training, which usually combines theoretical and content knowledge with teaching practice in schools, may be ineffective (Lewin, 2004). But the extent of the problem has not been fully investigated, and given limited data, researchers have not been able to tease out differences between that knowledge necessary for teaching a subject such as mathematics, and that necessary for carrying out professional classroom administrative tasks which rely on a basic knowledge of arithmetical operations; or similarly, that knowledge that is needed to teach a subject such as English, or in the language of English, and that necessary to read basic texts and extract from these information necessary to prepare teaching notes or lesson plans. We must ask therefore, what is it that teachers should know and be able to do?

13. These findings highlight three key problems for the development of teacher quality in Nigeria:

14. First, deciding who can become a teacher, how long they should train, what their training should consist of is a difficult predicament in an educational system that need both an adequate number of teachers and a teacher corps of good quality. Increasingly more students with weak academic backgrounds and relatively short cycle of education (some having only completed the primary school cycle of 6 years, and others with three years of secondary education) are recruited into teacher training. Given that the outcomes of schooling are generally weak, especially basic literacy and numeracy, and the teacher training curriculum over burdened with irrelevant subjects, it is difficult to see how students can significantly improve the knowledge they need to teach effectively.

15. Second, the educational management information system in Nigeria is weak at best. Data are not available to assist policy makers and planners to make informed policy decisions. Indeed, the teacher needs assessment survey reported here would be an important addition to such a database. Moreover, without such information the compact requiring teachers and schools to deliver an acceptable standard of education, and the commitment of government to the public to ensure that this is done, is not possible. This goes against the grain of Nigeria's most recent political initiatives to involve the public in monitoring the delivery of education through its Community Accountability and Transparency Initiative (see Johnson, 2008b).

16. Third, although there is a genuine commitment by the government of Nigeria to support the professional development of teachers, those initiatives that do exist, lack the benefit of a reliable needs analysis as pointed out above. Consequently, they are uncoordinated and uncertain. Additionally, there is not always sufficient resources available to make teacher development policies meaningful. Specifically, there seems to be an irreducible tension between the demand for teachers to perform better and a lack of incentive systems and career paths that might enable this.

17. This paper argues that these predicaments inhibit strategies for the development of teachers and create a number of policy dilemmas. These include questions such as, should teachers who do not perform be dismissed?; should the provision of teacher professional development be brought under the control of the state rather than be left to a range of separate providers?; should teacher salaries which already account for 80% of the educational budget be increased to encourage better qualified applicants to the profession and to raise the motivation of those currently serving?

18. This report discusses the findings of the Kwara Teachers Development Needs Assessment. The study was commissioned by the Kwara Ministry of Education and carried out by a ministerial task team with the support of two external consultants.

19. Over 19,000 teachers (the entire population of primary and junior secondary teachers in Kwara) were subjected to a range of tests designed to assess subject knowledge, defined here as a basic knowledge of literacy and numeracy; and whether they could apply such basic knowledge to professional tasks such as marking student work, reading for information, writing, calculating percentages and averages, plotting simple graphs, and so on.

20. First, let us turn to the following question…

Why test teachers?

21. There are strong concerns about whether teachers do, or even can do, what is expected of them to deliver good quality education. But not enough is known about teacher capabilities, particularly how comprehensively they know their subject material and their familiarity with general pedagogical knowledge (Grossman, 1990). This information is crucial if politicians and international development partners are to engage in the difficult task of educational recovery.

22. Studies on educational quality in developing countries have not been able to include such data, primarily because methods for their collection have not been fully developed. Researchers have therefore been content to use proxy measures of teacher capability, such as teacher qualification or years of schooling. This is not satisfactory because large numbers of primary school teachers in developing countries do not have adequate academic qualifications (Hoover and Wolforth, 1997; Osei, 2006; Raina and Dhand, 2000). Although there are no agreed benchmarks, becoming a primary school teacher can range from twelve to seventeen years of education. In some sub-Saharan African countries, out of a number surveyed in 2001, less than 10% of the teaching force met even the low minimum standard (lower secondary school education) and many countries fell short of standards set at upper secondary level (UNESCO, 2005). A study of fourteen low income countries, conducted by Schleicher, et al (1995) shows the low levels of education and training among primary-school teachers in these countries: 92% of teachers in Benin, 91% in Uganda and Tanzania, and 89% of teachers in the Maldives have less than nine years of education. By contrast, all teachers in Ethiopia had more than nine years of education. What is interesting is that in most of the countries surveyed, a majority of teachers had received at least some initial teacher training despite their very low levels of academic qualifications. In Benin for example, 92% of

primary-school teachers had less than ten years of education but 99% had received training. Also of note is Ethiopia and Uganda. In Ethiopia, although all its teachers have more than nine years of schooling, only 13% have received any formal initial teacher training. In Uganda, this figure was 50%.

What should teachers know and be able to do?

23. It is difficult to define what teachers should know and be able to do. Teaching is an evolving profession and the skills and capabilities that teachers need to be effective at their jobs evolve with years of experience. How society perceives the role of the teacher is also critical to deciding what teachers should know and do. This too is difficult because teachers are seen as all things to all people. To illustrate this point, Joel Springs (2006) asks of Americans:

24. 'What is an American teacher? Guardian of morality and American character? Civilizer of western mining and ranching towns? Saint of freed slaves? Social worker in urban slums? Americanizer of immigrants? Protector against fascism and communism? Warrior against poverty? Champion of the global economy?

25. Similar questions could be asked about the role of teachers in Nigeria. But regardless of the 'big' answers, it is commonly agreed that teachers have a duty of care towards their students. No child should be expected to put up with poor teaching from teachers who are not competent or under-prepared for their role in the classroom.

26. It is therefore important in the context of developing countries, and in this case, in Nigeria specifically, to find general agreement on a minimum knowledge and capability threshold for teachers.

27. Grossman (1990) advances a model of teacher knowledge which we have found useful in developing the minimum knowledge and capability threshold for teachers in Nigeria.

28. Grossman divides his model into 'subject matter knowledge', 'general pedagogical knowledge' 'pedagogical content knowledge' and 'knowledge of context'

29. Grossman's model is useful and can be applied to an assessment of teacher knowledge in developing countries. But, we feel that the model lacks a 'stage before'. In more-developed countries, a certain level of basic literacy and mathematical competence is assumed for those entering the teaching profession. As discussed above, in developing countries, there is an enormous variation in basic literacy and numeracy.

30. But effective teaching at the primary level depends on teachers having a basic level of literacy and numeracy. Moreover, that these basic levels of literacy and numeracy can be applied in the teaching of subjects such as primary mathematics and primary English, and used in the development of lessons (reading for factual information and presenting information) and in general classroom administration (for example, keeping records, calculating children's test results, and writing reports). These basic levels of literacy and numeracy and their application in everyday teaching and administrative tasks, form the basis of the minimum knowledge and capability threshold for teachers in Nigeria.

The teacher professional development needs survey

31. A comprehensive survey of teacher knowledge was undertaken, as reported above. Four interrelated tests were devised to establish the minimum knowledge and capability threshold. The first was a test of basic numerical knowledge for the teaching of primary mathematics. The argument is that as all primary school teachers are responsible for teaching primary mathematics, it is reasonable to expect that they have knowledge of those items in the Nigerian Grade 4 syllabus, for students aged ten. This includes a basic manipulation of numbers, place values, time, measurement, and fractions.

32. The second was a test of basic literacy for the teaching of English as a subject. Primary school teachers are responsible for teaching basic structures of the English language as given in the Nigerian Grade 6 syllabus, for students aged twelve. It was a reasonable expectation therefore that they have a basic level of English language competence, equivalent to that we would expect from a child aged twelve, to know the meanings of words, pick out of a list words with the same or different meanings, and recognise where in a simple passage, to insert various forms of punctuation (full stops, capitals, exclamation marks, and quotation marks).

33. The third test was essentially a reading comprehension test, but developed in such a way that teachers understood the purpose of the test to be one in which the information extracted from the basic readings given, was to be used in the development of lesson planning notes. The argument was that primary school teachers are expected to develop lesson plans. At best, these plans include the content of the lesson, an illustration of methods of teaching, identification of resources, learning outcomes, and so forth. At very least, a teacher who is prepared for the task of teaching, will have made some notes on the content of the lesson. This would require a basic capacity to read a one or more texts for information. It is reasonable to expect that at minimum, a teacher capable of planning a lesson should be able to extract information from texts and use this in the writing of teaching notes. It is reasonable to expect that teachers will

successfully comprehend simple pieces of writing, equivalent to what we might expect a child of twelve years to read, and extract and use information correctly.

34. The final test was the extent to which teachers could apply basic numeracy to classroom administrative tasks. Primary school teachers are expected routinely to make observations about their students' learning (whether students are learning and where the difficulties lie). This might involve an analysis of classroom tests, including adding up marks, turning raw scores into percentages, reading simple bar charts, and making simple charts to show trends in children's test scores or differences between boys and girls.

35. In was important to profile the outcomes such that they were able to provide an overview of teachers' areas of strengths and weakness and a profile of those teachers displaying good levels of knowledge, and those for whom further training would be necessary. It was decided to develop a profile containing four levels of achievement. The top level identified those teachers achieving the minimum knowledge and competency threshold. The second level identifies those are teachers falling just short of the minimum knowledge and competency threshold. The third level identifies those teachers falling some way short of the minimum knowledge and competency threshold. The fourth level identifies those teachers falling a long way short of the minimum knowledge and competency threshold.

36. Testing teachers can be a contentious issue, not least because of the perceived validity of the tests. Until now the usual practice for the assessment of teacher knowledge has been to give teachers the same tests (normally Mathematics) as those devised for primary aged children. These approaches to testing are likely to undermine both the validity of the tests as well as teacher professionalism. Confronted by a test designed for a primary aged student, many teachers feel insulted by this and moreover, they do not understand the nature of the task in relation to what they have to do as professionals. We have taken this into account in the development of the tests used in this study.

37. In looking at teacher competencies in mathematics and English, teachers were given test papers that had already been completed by a (fictitious) student. The teachers were asked to mark the paper. Asking teachers to mark a paper completed by a student is more ethically proper than asking teachers to answer the test paper themselves. The end result however, is the same. A teacher will need to be able to work out the answers in order to 'mark' the test paper.

38. An extract from the test papers is given below:

The following test papers for Mathematics (Part 1) and English (Part 2) have been completed by a child in a Primary 4 class. The child's answers are shown in the first column (see the example below). Please mark the answers using a ✓ *, for those answers that are correct and a* ✗ *for those answers that are not correct (see the example below). For those answers that you mark* ✗*, you* ***must write the correct answer*** *in the space provided (see the example below).* ***If you do not write the correct answer, your response will be marked wrong.***

Example

	Child Answer	**Mark correct or incorrect here**	**Write the correct answer here**
1. (6 X 5) - ☐ = 13	**7**	✗	**17**
2. Complete the sequence below: 50 ☐ 100 125 ☐ 175 200 ……	**75** **150**	✓	
3. Write the four letter word that is hidden at the end of one word and the beginning of the next word: a. The **car d**rove away very quickly	**card**	✓	
4. Find two synonyms in the following line: haphazard orderly disarray evenly	**haphazard** **evenly**	✗	haphazard disarray

39. In testing reading comprehension, teachers were provided with a selection of non-fiction, expository texts on an aspect of work in social studies or science. The texts were all concerned with the Niger Delta. The teachers were asked to read the extracts and then write out notes that they would use in teaching a lesson. The purpose here again was to create an authentic task, i.e., one that teachers understood in the context of their professional work.

Extract from test paper 3

You will be teaching a Social Studies lesson to children in Primary 6. The lesson is on the Niger River and the Niger River Delta. The aim is for children to identify the countries through which

the Niger River flows, to identify the people and wildlife in the Niger Delta, and to understand the effects of oil production on the lives of people and animals.

Your task is to write out some answers to questions that you will ask pupils to answer and in simple note form, some sections of the lesson that you will be teaching.

A number of resources are provided below to help you in this task.

These are:

- *A map of the countries that the Niger River flows through*
- *A map of the main rivers of Nigeria*
- *A short note describing the ethnic groups and states that make up the Niger Delta.*
- *An advert from a travel agent*
- *A newspaper report*

RESOURCE MATERIALS:

1. A map of the countries through which the Niger River flows

The Niger River is 2,600 miles long and is the third longest river on the continent of Africa, after the Nile and the Congo. It is considered to be the principal river of West Africa.

2. Map of main rivers in Nigeria

The names of the major rivers that flow through Nigeria are the river Niger (which is where Nigeria gets its name), and the river Benue. The 'end' region where the Niger river meets the ocean is commonly referred to as 'Delta'. This map shows a very simple illustration of their route.

3. Notes

The **Niger Delta**, the delta of the Niger River in Nigeria, is a densely populated region sometimes called the **Oil Rivers** because it was once a major producer of palm oil

The Niger Delta, as now defined officially by the Nigerian Government, extends over about 70,000 km² and makes up 7.5% of Nigeria's land mass. Historically and cartographically, it consists of present day Bayelsa, Delta and Rivers States. Some 31 million people[1] of more than 40 ethnic groups, speaking some 250 dialects live in the Delta; the Ijaw being in the majority. Their livelihoods are primarily based on fishing and farming.

4. An advert from a travel agency

The Niger River Delta is one of the largest deltas in the world. Explore lakes, mangroves, and swamps of the Niger River Delta and you may find yourself face to face with West African manatees, hippopotamuses, and rare pygmy hippos, all munching on the lush vegetation. Spot-necked and swamp otters may splash nearby, and at least 150 fish species swim in this rich eco-region. Some fish, such as the denticle herring and the hinge mouth, are found only in Africa.

Ask children to look at a map of the Niger river and answer the following questions: What are the names of the countries through which the Niger river flows?	1. The Niger River flows through the following five countries: **a) ……..** **b) ……..**

Where is the source of the Niger River? Where is the mouth of the Niger River? In what country is the Niger Delta?	**c) ……** **d) ……** **e) ……** 2. The source of the Niger River is: (write the name of the country below) **f) ……..** 3. The mouth of the Niger river is in: (write the name of the country below) **g) ……** 4. The Niger Delta is in: (write the name of the country below) **h)……** 5. What are the major rivers in Nigeria (write the names of the rivers below)

40. In testing the application of basic mathematics to classroom administrative tasks, teachers were provided with various tables, for example a section out of a class register which includes children's names, ages, gender, test results in mathematics, English and science and asked to calculate average test scores, percentages achieved, to work out in which subjects girls do better than boys, calculate a simple bar graph, etc.

Extract from test paper 4

In this task you will be asked to answer a number of problems similar to that which you may come across in your own school. These are simple problems, requiring you to work out results that children achieve on class tests and to compile information in a report card.

Table 1 below shows the test results in English, Mathematics and Science for children in a Primary 4 class. ***Each test is out of 20 marks****.*

	Sex	***Tests***		
		English	***Maths***	***Science***
Bolaji	*m*	*10*	*20*	*20*
Yusuf	*m*	*8*	*17*	*19*
Fagbeni	*m*	*12*	*11*	*14*
Johnson	*f*	*17*	*13*	*18*
Aisha	*f*	*13*	*19*	*20*
Lawal	*f*	*19*	*16*	*20*
Alao	*f*	*14*	*11*	*13*
Loueth	*f*	*19*	*12*	*10*
Ahmed	*m*	*11*	*14*	*10*
Afolabi	*m*	*10*	*6*	*8*
Bondi	*m*	*18*	*20*	*20*
Mustafa	*m*	*8*	*17*	*19*
Ruafu	*m*	*12*	*11*	*14*
James	*m*	*11*	*13*	*18*
Omar	*m*	*12*	*19*	*20*
Mary	*f*	*19*	*16*	*20*
Agnes	*f*	*14*	*11*	*13*
Lorna	*f*	*19*	*12*	*10*
Sam	*f*	*20*	*14*	*10*
Maria	*f*	*11*	*6*	*8*

1. *What is Aisha's total mark out of 60?*
2. *What is her percentage mark for English?*
3. *What is her percentage mark for Maths?*
4. *What is her percentage mark for Science?*
5. *What is the average score for boys in Science?*
6. *What is the average score for girls in English?*
7. *In which subject do girls do better than boys?*

A minimum knowledge and capability threshold for teachers in Nigeria

41. We have argued above that there is a need to define a minimum knowledge and capability threshold. We suggest the following model:

The minimum knowledge and capability threshold

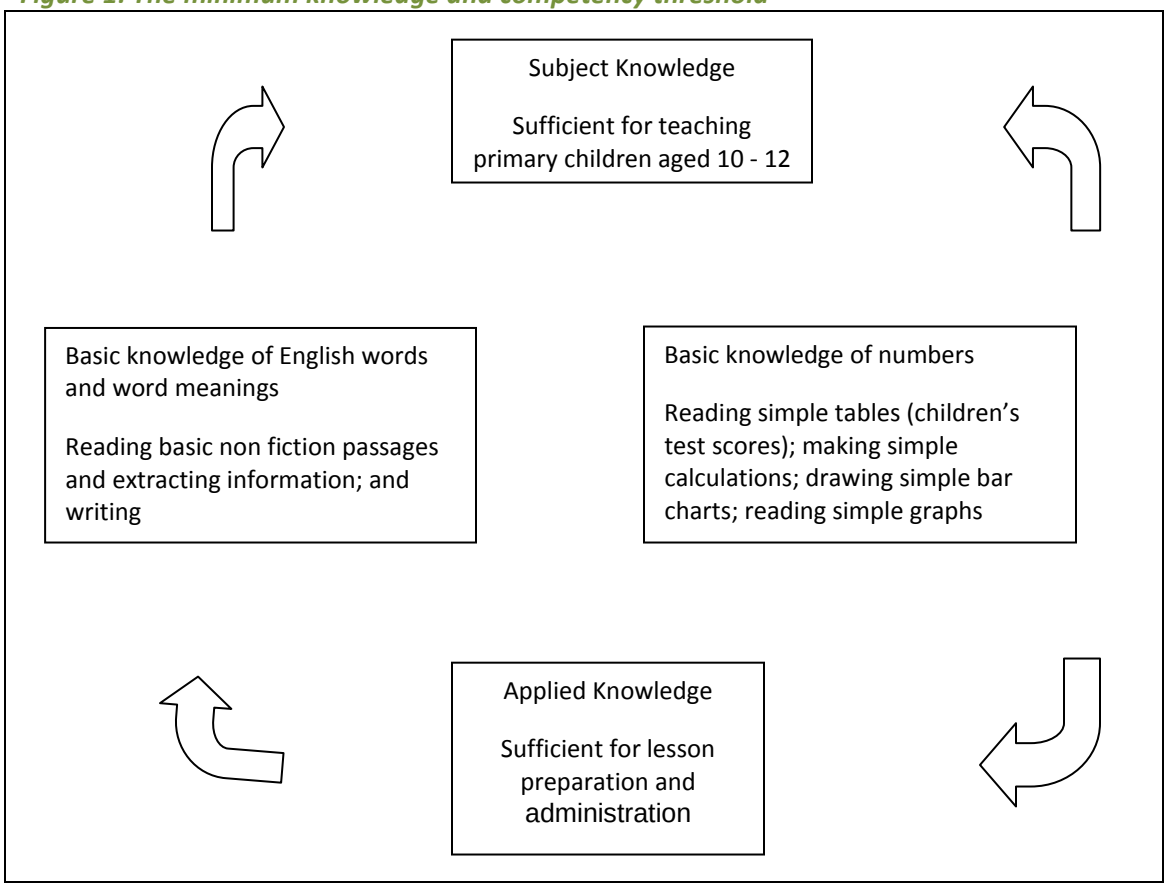
At minimum, a basic knowledge of numbers sufficient for the teaching of primary mathematics, as given in the Nigerian Grade 4 syllabus, for students aged ten. This includes a basic manipulation of numbers, place values, time, measurement, and fractions.

At minimum, a basic level of literacy sufficient for the teaching of English, as given in the Nigerian Grade 4 syllabus, for students aged ten. This includes a basic understanding word meanings, synonyms, sentence completion, verbal reasoning, and punctuation.

At minimum, the capability to apply basic numerical knowledge to classroom administrative tasks, including adding up marks, turning raw scores into percentages, reading simple bar charts, and making simple charts to show trends in children's test scores or differences between boys and girls. Further, to express this information in a simple report.

At minimum, being able to read a variety of simple texts for factual information and to use this information in making notes such as those required for teaching a lesson. Further, being able to write a simple letter which demonstrates knowledge of structure and form; the successful use of simple grammatical expressions and formal correctness (spelling and punctuation) such that it might serve as a model for teaching or as a tool for communicating with parents or others in the educational system.

Figure 1: The minimum knowledge and competency threshold



Testing for teacher knowledge and competencies

42. As discussed above, four interrelated tests were devised to establish the minimum knowledge and capability threshold. Indicators of achievement were developed for each test. The tests and indicators for achievement are given below:

Test A: Basic numerical knowledge for the teaching of primary mathematics.

Indicator of achievement:

Primary school teachers are responsible for teaching primary mathematics. It is reasonable to expect that they have knowledge of those items in the Nigerian Grade 4 syllabus, for students aged ten. This includes a basic manipulation of numbers, place values, time, measurement, and fractions. It is reasonable therefore to expect primary teachers to mark correctly (right or wrong answers) at least 80% of items in a primary mathematics test paper designed for pupils in the 10 year old age group.

Test B: Basic literacy for the teaching of simple language structures (synonyms, opposites, and word meanings).

Indicator of achievement:

Primary school teachers are responsible for teaching basic structures of the English language as given in the Nigerian Grade 6 syllabus, for students aged twelve. It is a reasonable expectation that they have a basic level of English language competence, equivalent to that we would expect from a child aged twelve, to know the meanings of words, pick out of a list words with the same or different meanings, and recognise where in a simple passage, to insert various forms of punctuation (full stops, capitals, exclamation marks, and quotation marks).

Test C: The application of basic literacy to lesson development.

Indicator of achievement:

Primary school teachers are expected to develop lesson plans. At best, these plans include the content of the lesson, an illustration of methods of teaching, identification of resources, learning outcomes, and so forth. At very least, a teacher who is prepared for the task of teaching, will have made some notes on the content of the lesson. This would require a basic capacity to read a one or more texts for information. It is reasonable to expect that at minimum, a teacher capable of planning a lesson should be able to extract information from texts and use this in the writing of teaching notes. It is reasonable to expect that teachers will successfully comprehend simple pieces of writing, equivalent to what we might expect a child of twelve years of age to read, and extract and use information correctly at least 80% of the time.

Test D: The application of basic numeracy to classroom administrative tasks.

Indicator of achievement:

Primary school teachers are expected routinely to make observations about their students' learning (whether students are learning and where the difficulties lie). This might involve an analysis of classroom tests, including adding up marks, turning raw scores into percentages, reading simple bar charts, and making simple charts to show trends in children's test scores or differences between boys and girls. It is reasonable to expect that at minimum, an effective teacher is able to accomplish 80% of such tasks.

Profiling the levels of achievement

43. We have argued that it is reasonable to expect, given that the test material is equivalent to mastery levels we would expect for children in aged 10 to 12 years, that competent teachers achieve scores of at least 80% in each of the four tests, and an average total mean score of 80% or above.

Band 1 – The minimum knowledge and competency threshold (test scores in the range of 80% to 100% in each of the four tests, and an average percentage score of 80%

These are teachers achieving the minimum knowledge and competency threshold. Those towards the top end might be identified as resource teachers

Band 2 – Developmental Group A (test scores in the range of 60% to 79% in each of the four tests, and an average percentage score of at least 60%)

These are teachers falling just short of the minimum knowledge and competency threshold, but could improve with targeted professional development support

Band 3 – Developmental Group B (test scores in the range of 40% to 59% in each of the four tests, and an average percentage score of at least 40%)

These are teachers falling some way short of the minimum knowledge and competency threshold, but could improve with professional development support involving a variety of methods and media (i.e., it may not be useful to provide training in the form of print media and workshops).

Band 4 – Developmental Group C (test scores falling below 40%)

These are teachers falling a long way short of the minimum knowledge and competency threshold. Some improvement may be possible through professional development support involving a variety of methods and media (i.e., it may not be useful to provide training in the form of print media and workshops) but more likely, retraining in a set of specific classroom tasks or redeployment might be considered.

The findings

44. If we look at the overall test scores across all four tests, we find that…

Only .4% or 75 teachers achieve an average percentage score within the 80% to 100% range.

20% (3,814) of teachers achieve an average percentage score in the range 60% to 79%.

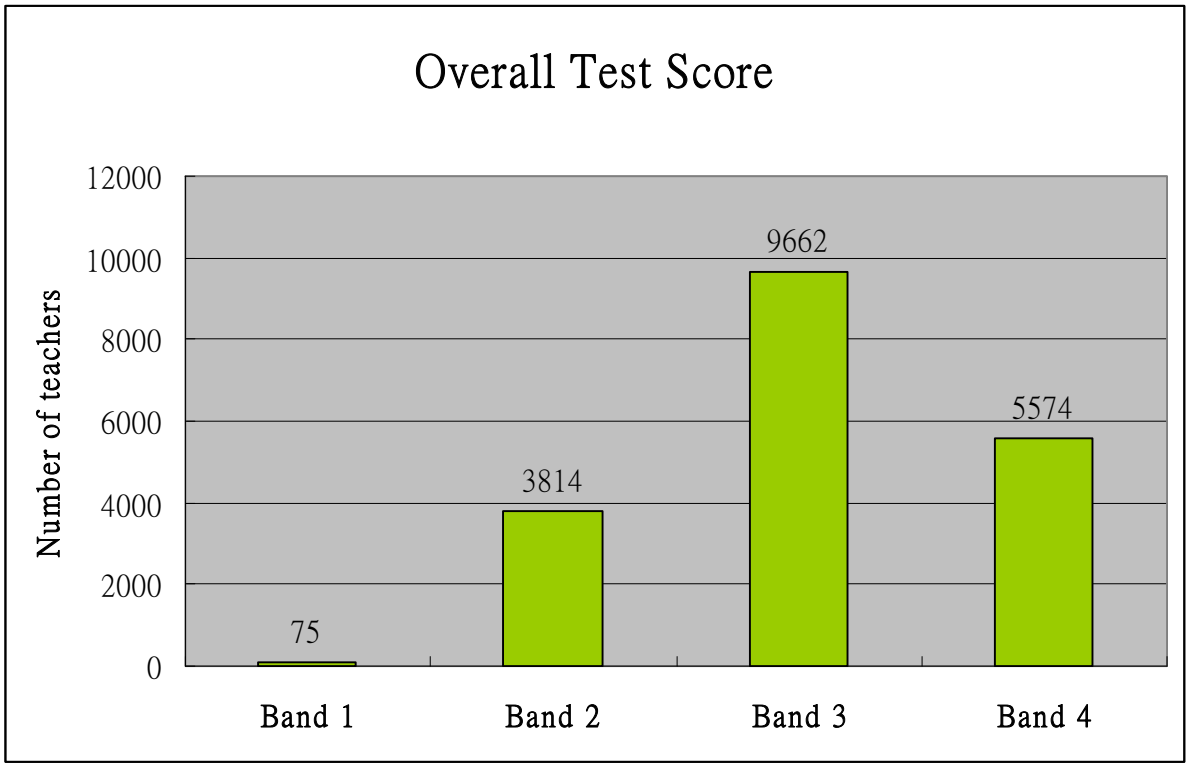
Just over 50% (9,662) of teachers achieve an average percentage score in the range of 40% to 59%.

29% (5,574) of teachers achieve an average percentage score in the range 40% and below.

259 teachers fail to score on the tests.

[See figure 2 below]

Figure 2: average percentage scores for the entire population of teachers in Kwara



45. The numbers of teachers in achieving scores in the 80% - 100% range are not those achieving the minimum knowledge and competency threshold. In this graph the scores are average percentages (in other words, there may be some tests in which teachers

achieve less than 80% and other in which the achieve higher. The criterion for achieving the minimum knowledge and competency threshold is achieving 80% or higher in each test.

46. There are so few teachers with average percentage scores in the 80% to 100% range, so we looked at what we find when we expand the range to include scores from 70% to 100%...

Table 1: Expanding the range

ORIGNAL RANGE					**ENLARGED TOP RANGE**		
		Frequency	Percent			Frequency	Percent
< 40%		5574	29.1			5913	29.8
50-59%		9662	50.5	=>		9998	50.4
60-79%		3814	19.9			2950	14.9
80-100%		**75**	**0.4**			**962**	**4.9**
	Total	19125	100.0			19823	100.0

47. 962 teachers (4.9%) achieve average percentage scores within the 70% to 100% range. But again, the numbers of teachers in the enlarged top range are not those achieving the minimum knowledge and competency threshold. i.e., they do not necessarily meet the criterion for achieving the minimum knowledge and competency threshold, which in this scenario is set at achieving 70% or higher in each test.

This does not change the picture significantly…

48. Using the original range distribution, how do teachers perform in each LGA?

Table 2: Profile of teachers by achievement band and LGA

		Score Final Group				**Total**
		Below 40%	40-59%	60-79%	80-100%	
LGA	Asa	589	972	213	4	1778
	Baruten	419	343	52	0	814
	Edu	468	580	113	2	1163
	Ekiti	173	241	103	3	520
	Ifelodun	466	929	374	6	1775
	Ilorin East	470	999	314	6	1789
	Ilorin South	352	838	305	6	1501
	Ilorin West	343	1559	760	13	2675
	Irepodun	337	747	380	5	1469
	Isin	43	213	249	6	511
	Kaiama	195	286	48	0	529

	Moro	752	556	116	2	1426
	Offa	124	570	491	16	1201
	Oke Ero	89	260	114	3	466
	Oyun	319	381	156	3	859
	Patigi	435	188	26	0	649
Total		5574	9662	3814	75	19125

49. The findings by LGA are unremarkable. The largest proportion of teachers (1.3%, or 16 out of 1,201) achieving average scores that fall within the 80% to 100% range are in Offa. Although 13 teachers in Ilorin West achieve scores within the 80% to 100%, this accounts of only 0.5% of all the teachers in that LGA. This is slightly below Ekiti which while it boasts only 520 teachers, 3 of these, or 0.6%, achieve scores that fall within the top range.

50. So how many teachers do achieve the minimum competency threshold at the 80% to 100% stringency level?

The results are cause for concern…

Only 7 out of 19, 125 teachers achieve the minimum knowledge and competency threshold (i.e., the achieved scores of 80% or more in each of the four tests.

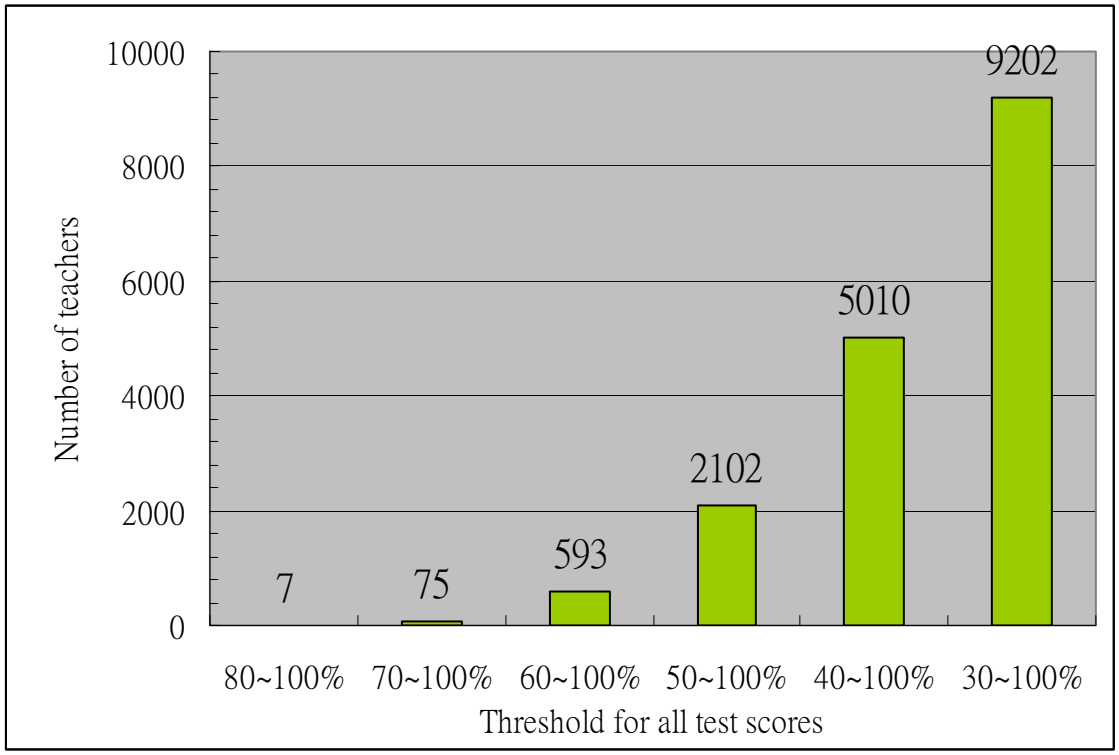
51. The results are so poor that it could be argued that the competency threshold of 80% and above is to stringent (despite the arguments advanced above).

52. *So, what picture might we get if we remodelled the competency thresholds (with a different semantic premise)…..*

53. Assuming it is thought that the tests were too difficult, and that it is not reasonable to expect teachers to achieve 80% as an indicator of knowledge and competence.

54. Alternative competency thresholds might be given as, (a) achieving 70% and above across all four tests; (b) achieving 60% and above across all four tests; (c) achieving 50% and above across all four tests, (d) achieving 40% and above across all four tests, and (e) achieving 30% and above across all four tests. Reducing the thresholds in each test will produce a different profile of achievement, and in a sense reduce the desired outcome, making it easier to achieve. How these profiles are used will depend very much on the Ministry of Education.

Figure 3: Remodelling the minimum knowledge and competency threshold – different levels of stringency



55. We know that only 7 teachers (0.03%) achieve the minimum knowledge and competency threshold when the stringency level is set to scores within the range of 80% to 100% in each of the four tests.

56. When the threshold is reduced to accommodate those scoring within the range of 70% to 100% in each of the four tests, only 75 (0.39%) teachers achieve the minimum knowledge and competency threshold. The number increases to 593 (3.1%) when the threshold is set to scores which fall in the range, 60% to 100%, and to 2,102 (11%) when the threshold is set to scores which fall in the 50% to 100% range for each of the four tests. Less than half (48.11%) the teacher population in Kwara achieve the minimum knowledge and competency threshold, even when the threshold is set to scores in the range of 30% to 100%.

57. Are there significant differences between male and female teachers?

58. The minimum knowledge and competency thresholds at different levels of stringency are shown below by gender.

Table 2: Male and Female teachers achieving the minimum knowledge and competency levels by reducing thresholds

	Number of teachers	Male	Female
80~100%	7	4 (57.1%)	3 (42.9%)
70~100%	75	26 (36.1%)	46 (63.9%)
60~100%	593	194 (34.2%)	373 (65.8%)
50~100%	2102	667 (33.4%)	1328 (66.6%)
40~100%	5010	1556 (33.3%)	3119 (66.7%)
30~100%	9202	2896 (34.1%)	5593 (65.9%)
Scoring 0%	259		

59. Of the 7 teachers achieving the minimum knowledge and competency threshold (at 80%) there are 4 males and 3 females. More female teachers achieve the minimum knowledge and competency threshold when it is set at 70% and lower.

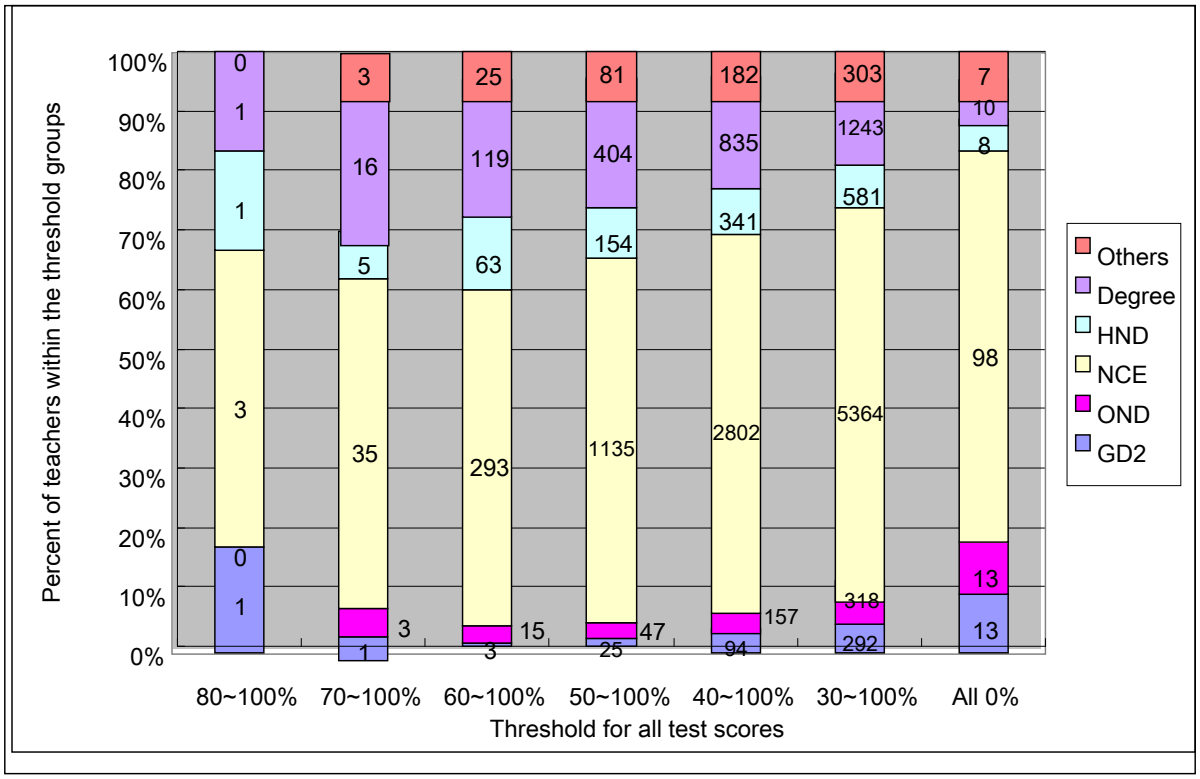
60. *An important question is - Do those with the highest qualifications also do better on the tests…?*

The answer is 'No'

The data shows that only 1 teacher of 2,628 that hold degrees, achieves the minimum knowledge and competency threshold at the 80% and above stringency level. Even when the stringency level is reduced to 50% and above, only 404 teachers of those holding degrees achieve the minimum knowledge and competency threshold.

Remarkably, 10 teachers who hold degrees score nothing on the tests.

	GD2		OND		NCE		HND		Degree		Others		Missing	
	F	%	F	%	F	%	F	%	F	%	F	%	F	%
80~100%	1	14.3	0	0	3	42.9	1	14.3	1	14.3	0	0	1	14.3
70~100%	1	1.3	3	4	35	46.7	5	6.7	16	21.3	3	4	12	16
60~100%	3	0.5	15	2.5	293	49.4	63	10.6	119	20.1	25	4.2	75	12.7
50~100%	25	1.2	47	2.2	1135	54	154	7.3	404	19.2	81	3.9	256	12.2
40~100%	94	1.9	157	3.1	2802	55.9	341	6.8	835	16.7	182	3.6	599	12
30~100%	292	3.2	318	3.5	5364	58.3	581	6.3	1243	13.5	303	3.3	1101	12
All 0%	13	5	13	5	98	37.8	8	3.1	10	3.9	7	2.7	110	42.5
	429		553		9732		1153		2628		601		2154	



61. The overall results are not good. So how do teachers perform on each test?

Nearly 32% of teachers (6,371) have the minimum knowledge necessary to teach primary mathematics to children up to the age of 10 years.

But, an assessment of their ability to apply themselves to classroom administrative tasks that require knowledge of basic arithmetic shows…

…that only 9.5% of teachers (1,880) achieve the minimum knowledge and competency threshold.

Nearly 29% of teachers (5,962) are unable to perform simple arithmetical and other mathematical operations.

[See table 3 below, Tests A and D]

Only 1.2% of teachers (230) have basic literacy competencies that will allow them to teach English to 10 year old students. 49% of teachers (9,716) fall far short of the mark.

More worryingly is the fact that….

…nearly 60% of teachers cannot read for information, or use the information in preparing a simple lesson.

Only .6% of teachers can do so.

[See table 3 below, Tests B and D]

Teacher performance across four interrelated tests

	Test A		**Test B**		**Test C**		**Test D**	
	F	%	F	%	F	%	F	%
Below 40%	1447	7.3	9716	49.0	11781	59.4	5692	28.7
40-59%	3385	17.1	7282	36.7	5927	29.9	6675	33.7
60-79%	8674	43.8	2595	13.1	1995	10.1	5576	28.1
80-100%	6317	31.9	230	1.2	120	0.6	1880	9.5
Total	**19823**		**19823**		**19823**		**19823**	

Further Analysis and Discussion

62. The analysis and discussion that follows is intended to provide direction for the further professional development of teachers.

63. As we have seen from the discussion above, the overall achievement levels are poor. We look now at teacher performance on each of the four interrelated tests and discuss the potential for training to improve teacher performance.

64. Each score range is presented as a Band, i.e., the range 80% to 100% is denoted as band 1. Those achieving scores within this band are considered to have achieved, in the specific domain of knowledge being tested, the minimum knowledge and competence threshold (set here at the 80% and above stringency level). Teachers in this group could potentially be used to provide support to others (but this is not to say that they should

be made master teachers as there are different criteria for this). But they could play a role in whole school or in school professional development.

65. Those achieving scores in Band 2, i.e., in the range of 60 – 79% might be thought of as forming the developmental group 'A'. These teachers could benefit from a refresher course in the subject area being tested, or a basic training course in the application of knowledge.

66. Those in Band 3 might be classified as Development Group 'B'. These teachers may need more than 'top-up' training, and it is almost certain that any top-up training offered will need to rely on methods that do not over rely on reading texts. The implications here are huge.

67. Those in band 4 might be classified as Development Group 'C'. These teachers have poor basic literacy and numeracy and may not respond at all to traditional forms of professional development support. There are examples in the comparative literature on how teachers, even those with very poor basic skills, might be deployed successfully in the classroom. A discussion of this is outside the scope of this paper but it is evident that a better understanding of how this group of teachers might be used to effect, and what could be done to enhance or rebuild professional skills and competencies, is important.

68. *What do the results tell us about the top group and the three Developmental groups?*

69. We look at the mathematics paper first.

Test A: Basic numerical knowledge for the marking of a primary mathematics paper for a child aged 10

		Frequency	**Percent**
Band 4	Below 40%	1447	**7.3**
Band 3	40-59%	3385	**17.1**
Band 2	60-79%	8674	**43.8**
Band 1	80-100%	6317	**31.9**
	Total	19823	**100.0**

70. 32 % of teachers achieve scores that fall within Band 1 (80% to 100%) in a test of basic knowledge for the marking of a primary mathematics paper for children up to the age of 10 years.

71. 44% of teachers achieve scores that fall within Band 2 (60% to 79%) and while this is reasonable, it indicates the need for refresher training in primary mathematics.

72. 17 % of teachers achieve scores in the range of 40% to 59% (Band 3). This is unsatisfactory. These teachers are only able to mark correctly (answers that are right or wrong) between 40% and 59% of items on a mathematics paper designed for and answered by a ten year old child. It is not clear whether these teachers will respond to training in the form of refresher courses.

73. More worrying is the fact that 7% of teachers achieve scores of below 40%. These teachers are not able to mark (and therefore teach) primary mathematics to children aged 10. It is doubtful whether they will respond well to traditional refresher courses. For these teachers, it might be necessary to consider policy options such as Interactive Radio Instruction for Mathematics which has achieved success in several countries in Latin America and Africa.

74. *Are there differences by gender in teachers' knowledge of primary mathematics?*

		Mathematics				**Total**
		Below 40%	40-59%	60-79%	80-100%	
	Male	529	1255	2838	2272	6894
	Female	599	1679	4955	3563	10796
Total		**1128**	**2934**	**7793**	**5835**	**17695**

75. Proportionally, there are no significant differences in the achievement levels of male and female teachers.

76. Test B: Basic literacy for the teaching of simple language structures (synonyms, opposites, and word meanings).

77. *What about achievement on the English test?*

		Frequency	**Percent**
	Below 40%	9716	**49.0**
	40-59%	7282	**36.7**
	60-79%	2595	**13.1**
	80-100%	230	**1.2**
	Total	**19823**	**100.0**

78. Only 1.2 % of teachers achieve scores that fall within Band 1 (80% to 100%) in a test of basic literacy for the teaching of English for children up to the age of 10 years.

79. 13% of teachers achieve scores that fall within Band 2 (60% to 79%) (Development Group A) and 37% of teachers achieve scores in the range of 40% to 59% (Development Group B). Development Group B would benefit from top-up training, and even a 'distance mode' which involves reading and discussion of simple teacher worksheets (extracts from teacher guides) may achieve some success. A larger group of teacher fall in Development Group C and this suggests the need for a more concerted training effort in basic English and more generally, basic literacy.

80. Of concern is that 49% of teachers score below 40%. When compared to the score achieved in paper designed to assess basic mathematics, these results are much weaker. Here to we might look towards the international literature, particularly the success of Zambia with the teaching of English, also through IRI.

81. Scores by gender are unremarkable.

	English				
	Below 40%	40-59%	60-79%	80-100%	Total
Male	3644	2341	832	77	6894
Female	4773	4314	1568	141	10796
Total	**8428**	**6658**	**2401**	**218**	**17705**

Test C: The application of basic literacy to lesson development

Lesson Preparation in Achievement Level Groups

	Frequency	**Percent**
Below 40%	11781	**59.4**
40-59%	5927	**29.9**
60-79%	1995	**10.1**
80-100%	120	**.6**
Total	**19823**	**100.0**

82. The scores achieved on this test raises concern. Only 0.6 percent of teachers (120) achieve scores that fall within Band 1 (80% to 100%) in what is essentially a reading comprehension test, the content that should be readable to 12 year old children.

83. 10.1% of teachers achieve scores that fall within Band 2 (60% to 79%) (Development Group A) and 29% of teachers achieve scores in the range of 40% to 59% (Development Group B).

84. Development Group B and C would benefit from top-up training, designed to improve their reading abilities. Much more alarming is that 60% of teachers are unable to read. This finding appears to be consistent with other studies into the reading competencies of teachers in Nigeria (see Ackers, 2007).

85. There are no significant differences between male and female teachers in this test.

		Reading for Lesson Preparation				**Total**
		Below 40%	40-59%	60-79%	80-100%	
	Male	4231	1896	713	54	6894
	Female	6011	3572	1155	58	10796
Total		**10256**	**5469**	**1868**	**112**	**17705**

Test D: The application of basic numeracy to classroom administrative tasks

Classroom Management in Achievement Level Groups

		Frequency	**Percent**
Valid	Below 40%	5692	**28.7**
	40-59%	6675	**33.7**
	60-79%	5576	**28.1**
	80-100%	1880	**9.5**
Total		**20376**	

86. 9.5 % of teachers achieve scores that fall within Band 1 (80% to 100%) in a test of which looks at their use of basic mathematics for classroom administration and management tasks.

87. 28% of teachers achieve scores that fall within Band 2 (60% to 79%) and while this is reasonable, it indicates the need for refresher training in basic mathematical operations.

88. 33% of teachers achieve scores in the range of 40% to 59% (Band 3) and 28% of teachers score under 40%.

89. Although this profile is better than that of reading for lesson planning, and suggests that teachers are stronger on numerical papers than in literacy papers, the profile is not as

encouraging as that for the paper on basic mathematics. This suggests that further top up training in the manipulation of arithmetic is needed.

90. There are no significant differences between male and female teachers.

		Mathematics for Classroom Administration				**Total**
		Below 40%	40-59%	60-79%	80-100%	
	Male	2340	2244	1727	583	6894
	Female	2520	3725	3389	1162	10796
Total		**4872**	**5969**	**5119**	**1745**	**17705**

Policy matters

91. The results from the teacher assessment test discussed above are a cause for concern and they produce a number of policy dilemmas.

92. First, we must ask in the light of these findings whether the academic qualifications of aspirant teachers are adequate when they enrol for initial teacher training. There are no definite answers to this but it is highly likely that they are not. It would be a sensible policy option to use the tests developed here to screen applicants as they enter training and through a similar method of profiling achievement, to put in place a series of academic support programmes. If the profile suggested by the tests discussed here is similar when applied to those enrolling for initial teacher training, it is likely that 30% of applicants would be rejected on the grounds that they have insufficient basic literacy. At least half of all applicants might have to dedicate a good proportion of an academic year on specifically designed courses to improve their basic literacy and numeracy. I would argue here that the emphasis be placed on reading, and if there is an associated emphasis on pedagogy, then it would be on learning to teach reading.

93. The findings also suggest, and the point was made above, that pre-service teacher training is ineffective in increasing teacher subject and professional knowledge (Lewin, 2004). But the extent of the problem has not been fully investigated, and given limited data, researchers have not been able to tease out differences between that knowledge necessary for teaching a subject such as mathematics, and that necessary for carrying out professional classroom administrative tasks which rely on a basic knowledge of arithmetical operations; or similarly, that knowledge that is needed to teach a subject such as English, or in the language of English, and that necessary to read basic texts and extract from these information necessary to prepare teaching notes or lesson plans.

That is until now. The benefits of the study discussed here to revising the initial teacher training curriculum are significant. The distinctions made between 'subject matter knowledge' and 'pedagogical content knowledge' (Grossman, 1990) and the profiles of achievement in each of these domains, offer new insights into possibilities for curriculum renewal.

93. Second, where there are indications that the quality of teaching is weak, the typical response of many governments and their international development partners has been to place their faith in policies for in-service teacher development. But the question that is rarely asked is, can in-service teacher development programmes remedy the effects of low entry standards and increase the academic and professional competencies of teachers, both those who hold teacher qualifications and those who do not? There is very little research on the effectiveness of in-service professional development on such basic teacher knowledge and capabilities. Anecdotal evidence suggests that it has little significant effect, but it would be unthinkable for it not to feature prominently as a teacher policy in the education plans of many developing countries.

94. More to the point, if in-service teacher development is not the panacea it is often made out to be, should those teachers with unacceptably low professional capabilities be purged from the system? This, it seems is a policy option that few developing countries want to, or can adopt. First, because many are constrained by the demand for 'more', as discussed above, and second, because the politics surrounding the development of policies around teachers' conditions of service are complex.

95. The study reported above demonstrates that there are only a very small number of teachers that achieve the minimum knowledge threshold who could be used as resource (for example as master teachers) in any planned in-service development programme. When the stringency levels to achieve the threshold are reduced by 10%, the number of such teachers increases to nearly 5%. This may be sufficient to produce the pool of resource or master teachers that the government seeks and that would be essential in delivering continuous professional development to the rest of the teacher population but how should such teachers' best be deployed? There are obvious dangers in taking the best teachers out of the classroom and placing them into a different role. However, there are good examples of professional development models, such as that in The Gambia (see Johnson, 2008c) where master teachers remain school-based and teach, although at a marginally reduced level, while providing support to other teachers in their schools. There are in fact indications that the Government of Nigeria is considering some form of school based mentoring in which experienced teachers and head teachers will serve as mentors to inexperienced teachers.

96. But, asking teachers to make different and arguably more responsible contributions to the profession, whatever the approach, demands policy discussions on teacher pay and incentives. What policy provision will be made for career paths and incentives? Teachers identified as 'good', may look towards the system for career enhancement opportunities. Those who are identified as needing to improve their competencies may also look for incentives.

97. There is no doubt that the majority of teachers need some form of continuous professional development. But it is clear from the needs analysis study that one size will hardly fit all. Twenty percent of teachers could improve with specifically targeted professional development support. They might benefit most from some form of training in literacy and numeracy, and it is possible that such training could be delivered in short week-end and school holiday blocks in an intensive fashion.

98. Of bigger concern is the fact that nearly half the teacher population appear to need some form of professional development support that would involve the production of a variety of methods and media. It may not be useful to provide training in the form of print media and workshops, bearing in mind is that nearly 60% of teachers cannot read adequately and that a further 30% fall some way short of achieving the norm; or that 29% cannot apply themselves to simple classroom tasks, including adding up marks, turning raw scores into percentages, reading simple bar charts, and making simple charts to show trends in children's test scores or differences between boys and girls and a further 34% fall far short of the norm. A professional development programme that takes this into account will require a great deal of resource.

99. The most challenging policy decision for the government is what to do with almost 30% of the teacher population who fall a long way short of achieving an acceptable norm.

100. One option may be to insist on some form of longer term retraining, but this would require significant efforts in developing more relevant training opportunities for serving teachers. It would not do much good for teachers to be sent back to those institutions responsible for initial teacher education, to take those forms of training currently available. The reasons for this were made clear above. It seems that the government of Nigeria may have to experiment with more innovative ways in which to actively employ these teachers in professional task that do not require, or at least immediately, those levels of competence described here.

101. Increasingly, there are examples in the developing world of the successful adoption of 'interactive radio instruction' in the teaching of mathematics (Bolivia, Guatemala,

Guyana, El Salvador, Thailand and Nicaragua) and languages (Zambia, Kenya, Lesotho, South Africa). Children are taught in the main through the medium of radio (increasingly the use of pre-recorded discs) and the role of the teacher is to ensure the participation of children, and to direct games and exercises as directed by the teaching on disc. Despite the very low levels of teacher knowledge in classrooms in which IRI is practised (main hard-to-reach schools), there are numerous studies that demonstrate the learning gains made by children when compared to non treatment groups. It may prove useful for Nigeria to think along these lines.

102. Third, I have argued above the importance of good quality information on teacher capabilities to facilitate policy development and political action. Politicians, trade unions and the public can all benefit from knowing what resources are available in the educational system. They can use this to enforce a compact between policy makers and politicians and between politicians and citizens; much like the way in which Uganda, Zambia and Tanzania used the knowledge gained from public expenditure tracking surveys, to hold service providers to account.

103. But good information systems are also crucial to monitoring and evaluation. A big concern at the moment is that there are no reliable baselines against which to measure the efficacy of teacher professional development programmes. Also, it would not be possible to track, over time, what progression if any individual teachers are making against their own professional development profiles. On this hinges important questions about teacher pay and reward policies, teacher deployment and career progression. Good information is also vital for policies on teacher dismissal, if after time, those teachers have not responded well to professional development activities.

Next steps

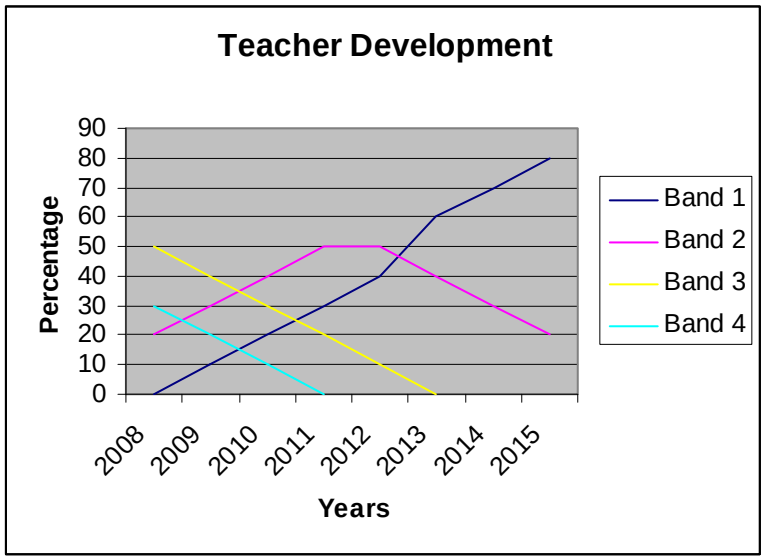
104. There is obviously a need to respond to these findings and it is through professional development of teachers, appropriately targets and taking into account the different facets of teacher knowledge, that this is best achieved.

105. I offer below a model for a stepped reduction of those teachers in the lowest bands. Using a very conservative estimate of 10% improvement in each band per year, and a 20% reduction of those teachers in Band 4 in the fist year of a professional development programme, the vast majority of teachers should reach the 80% threshold by the year 2015. If a more generous estimate was used, say 20% improvement per year, this could be achieved in a far shorter timescale.

106. The table below shows the proposed model for a stepped reduction of those teachers in the lowest bands and an increase of those in the highest bands.

	Band 1	Band 2	Band 2	Band 3
2008	0	20	50	30
2009	20	30	40	10
2010	30	40	30	0
2011	40	50	10	0
2012	50	50	0	
2013	60	40		
2014	70	30		
2015	80	20		

107. The model is shown graphically below.



Conclusions

108. In recent years, Nigerians have lost confidence in the ability of teachers to deliver. Teachers themselves are aware of this. There are recurrent calls for the Teachers Registration Council of Nigeria to ensure that (i) unqualified teachers leave the system and (ii) teachers just like other professionals are continuously provided with training and development in the form of mandatory professional development. But in this paper I

have demonstrated that the problem of teacher quality runs much deeper than a simple divide between qualified and unqualified teachers. The majority of teachers, it would seem, are in fact qualified but there remains a widespread lack of capability.

109. The evidence provided by the study of teacher needs reported here, has revealed a number of important dilemmas for the Nigerian government in the development of teacher policies. Most particularly, it has revealed the tension between the need to recruit more and more teachers, as access to education expands, and the need for good quality teachers, if the quality of learning and learning outcomes are not to decline.

110. Policy makers have not up to now, been able to resolve this tension adequately because they lacked vital information on teacher knowledge and capabilities. The natural default policy has been teacher professional development, but because of a lack of information, the design and implementation such policies has been impaired with multiple providers offering uncoordinated programmes, unspecific in content.

111. The primary purpose of this paper has therefore been to provide a profile of teacher knowledge development needs and to propose some directions for the development of more specific teacher development policies. However the paper has also raised the need for the much wider use for this information, and argues that the availability of such data in the public domain is essential to ensure the accountability of service providers to politicians and of politicians to communities.

112. The most salient conclusion reached in this paper is that the development of teacher policy imperatives in the developing world requires bold political initiatives, accompanied by continuous political support (Corrales, 1999). Teacher policies aimed at change must be accompanied by strategies to ensure compliance; but such compliance is necessarily one for which citizens (or communities) should themselves be accountable.

Further Research

113. The study points to a number of areas for further small scale research. One important area is to get a sense of whether those teachers with the best competencies also achieve the best student results? This is an important question and one that is worth pursuing in a small-scale study that cross tabulates teacher achievement and student achievement. This could be done by looking at available test scores for primary 6 against teacher information derived from this study.

114. But other questions are to do with designing and evaluating options for top up training of teachers.

Selection of master teachers

115. Using the 80% stringency levels and thereafter the 70% stringency levels, the following case summaries of those achieving the minimum knowledge and competency threshold is provided.

116. It is from this pool that resource teachers might be drawn (see appendix 1)

Annexes

Annex 1

Case Summaries (achieving 80% ~100% in all four tests)

Candidate Number	LGA	Qualification	Math	English	Lesson Preparation	Classroom Management
720405	7	Degree	93.33	80.00	85.00	86.67
1321107	13	NCE	96.67	83.33	85.00	90.00
0822201	8	GD2	90.00	90.00	80.00	90.00
0630938	6	HND	100.00	96.67	80.00	93.33
1321408	13	NCE	86.67	83.33	82.50	96.67
0620107	6	NCE	100.00	93.33	80.00	86.67
0745040	7	.	93.33	90.00	87.50	83.33
Total	7	6	7	7	7	7

Case Summaries (achieving 70~100% in all four tests)

Candidate Number	LGA	Qualification	Math	English	Lesson Preparation	Classroom Management
0812127	8	Others	96.67	73.33	75.00	70.00
520720	5	HND	76.67	73.33	72.50	73.33
0631023	6	NCE	93.33	70.00	70.00	80.00
0920927	9	Degree	86.67	80.00	75.00	83.33
1321640	13	NCE	83.33	76.67	72.50	76.67
0520617	5	Degree	86.67	73.33	70.00	93.33
720707	7	.	93.33	76.67	72.50	86.67
0830429	8	NCE	80.00	70.00	82.50	76.67
1320933	13	.	83.33	83.33	75.00	76.67
1430111	14	NCE	76.67	90.00	70.00	86.67
0120328	1	NCE	93.33	73.33	70.00	86.67

0920926	9	NCE	83.33	76.67	70.00	83.33
720405	7	Degree	93.33	80.00	85.00	86.67
1320937	13	.	83.33	80.00	75.00	83.33
0810621	8	HND	86.67	70.00	70.00	76.67
0570209	5	NCE	93.33	73.33	72.50	70.00
0851338	8	NCE	70.00	70.00	70.00	76.67
1321028	13	.	100.00	73.33	70.00	83.33
721611	7	HND	73.33	83.33	75.00	80.00
1321614	13	NCE	83.33	73.33	72.50	70.00
1321107	13	NCE	96.67	83.33	85.00	90.00
1321328	13	NCE	80.00	70.00	70.00	76.67
1321634	13	NCE	93.33	73.33	80.00	86.67
0520920	5	NCE	83.33	70.00	75.00	76.67
520710	5	Degree	90.00	76.67	75.00	76.67
0811012	8	.	73.33	73.33	75.00	73.33
0810601	8	OND	70.00	86.67	82.50	80.00
0640424	6	Degree	83.33	70.00	77.50	76.67
0910229	9	Degree	73.33	70.00	70.00	96.67
1321423	13	Degree	93.33	83.33	70.00	70.00
1310927	13	NCE	86.67	70.00	72.50	83.33
0950124	9	NCE	93.33	73.33	75.00	73.33
0822202	8	NCE	90.00	80.00	77.50	90.00
0811201	8	Degree	80.00	73.33	72.50	73.33
0822201	8	GD2	90.00	90.00	80.00	90.00
031622	3	NCE	73.33	80.00	82.50	90.00
0630938	6	HND	100.00	96.67	80.00	93.33
1320214	13	NCE	86.67	83.33	70.00	73.33
720214	7	NCE	100.00	70.00	77.50	90.00
1321502	13	NCE	90.00	83.33	75.00	76.67
1321622	13	Degree	96.67	70.00	82.50	86.67
0110525	1	NCE	86.67	76.67	82.50	86.67

0920532	9	NCE	73.33	73.33	72.50	76.67
1020309	10	HND	96.67	76.67	80.00	93.33
1320732	13	.	93.33	83.33	75.00	76.67
1310602	13	Others	90.00	76.67	70.00	86.67
0840438	8	NCE	86.67	76.67	85.00	76.67
0830428	8	.	90.00	70.00	75.00	76.67
1210140	12	.	86.67	80.00	72.50	76.67
1321408	13	NCE	86.67	83.33	82.50	96.67
0520933	5	NCE	83.33	83.33	77.50	86.67
1410522	14	Others	100.00	73.33	72.50	90.00
0520603	5	OND	93.33	70.00	80.00	83.33
0630933	6	OND	93.33	96.67	70.00	80.00
1320722	13	NCE	100.00	76.67	72.50	86.67
0811101	8	NCE	93.33	73.33	72.50	83.33
1311423	13	Degree	73.33	80.00	77.50	90.00
0910129	9	Degree	76.67	70.00	70.00	70.00
1020431	10	NCE	96.67	80.00	90.00	76.67
1420105	14	NCE	96.67	70.00	70.00	76.67
0570201	5	NCE	90.00	80.00	72.50	80.00
740424	7	Degree	86.67	86.67	77.50	80.00
1510725	15	Degree	93.33	76.67	70.00	70.00
07467	7	Degree	83.33	76.67	70.00	80.00
0731118	7	Degree	80.00	73.33	75.00	83.33
1311013	13	NCE	93.33	83.33	70.00	90.00
0620107	6	NCE	100.00	93.33	80.00	86.67
1020204	10	NCE	76.67	70.00	80.00	80.00
1010340	10	NCE	100.00	73.33	70.00	76.67
0822504	8	.	90.00	73.33	80.00	100.00
1530337	15	Degree	83.33	76.67	72.50	83.33
1420103	14	NCE	86.67	76.67	80.00	96.67
0745040	7	.	93.33	90.00	87.50	83.33

0150134	1		90.00	76.67	70.00	93.33
640801	6	.	90.00	83.33	80.00	76.67
Total	75	64	75	75	75	75