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Teaching and Learning Baseline Survey

Summary Report

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

Contents

Acronyms and Abbreviations

EFA	Education for All
ESSPIN	Education Sector Support Programme in Nigeria
JSS	Junior secondary School
LGEA	Local Government Education Authority
PRY	Primary

Abstract

1. The report presents the results of a survey of teaching and learning in a sample of 505 public primary and junior secondary schools in five ESSPIN states, which recorded the activity of teachers and learners in the classroom using a methodology of systematic observation.

Executive summary

2. A survey of teaching and learning was conducted in a representative sample of public primary and junior secondary schools across five ESSPIN states in May-July 2009 using the systematic observation method. External observers recorded the frequency of different behaviours of teachers and learners in order to obtain a picture of patterns of teaching and learning in the classroom. In addition, observers recorded the main resources available to teachers and learners in each classroom.

3. In each school, one English and one mathematics lesson were observed. Each lesson was observed by two observers: one focused on the teacher and the other on the students. Teacher trainers were used as observers. They brought a necessary prior understanding of the classroom and soon learned how to administer the instrument effectively. The main patterns of teaching and learning are remarkably similar across states with minor exceptions.

4. **Classroom organisation**: There are three main ways of organising a classroom: learners are taught together as a whole class; work as individuals on their own work; or work collectively in groups on common tasks or problems. All three methods are necessary.

5. Across the five states, teachers organise learners as a whole class for 97% of the time or all but one minute of an average lesson. This is not an appropriate balance. Firstly, however well it is managed, whole class teaching cannot offer the full range of learning experiences that are necessary for optimum cognitive development. Group work is very beneficial because it has been shown that when children communicate in groups both their cognitive and social skills are improved in ways that other types of learning do not match. Likewise, children need opportunities to work as individuals if their problem solving, process and analytic skills are to be improved.

6. **How teachers talk**: There is relatively little linguistic interaction between teachers and learners. For two thirds of the time, teachers either talk at the learners or are silent. Most of the remaining time is spent in drilling, in which the teacher leads the learners in chanting or gets them to repeat what she has just said. Teachers do spend some time questioning learners, but most questions are closed questions (just one right answer), often associated with drill work. Teachers ask more than eight times as many closed questions as open questions. Teachers do spend some time talking with individual

learners or groups of learners and, very rarely, engage in open discussion with the whole class, but these activities in combination only take up about two minutes in every lesson on average. These patterns of talk are not best suited to promote the intellectual development of children. Virtually no time is spent on: (a) discussion or open exchanges between teachers and students, or student and student, to explore information and ideas and to solve problems; (b) the use of dialogue to guide and prompt the handover of information or understanding. Instead, knowledge is presented as closed. Talk is dominated by the teacher.

7. **What teachers do**: Teachers spend more than half their time at the blackboard, either working on it themselves or observing a learner working on the board. The blackboard therefore serves as a focus for the teacher centred approach to pedagogy. The teacher will spend about four minutes in every lesson patrolling the classroom. In principle this is positive, particularly as some of this time is spent in talking to individual learners, but for most of this time the teacher is silent, indicating that the main purpose of patrolling the classroom is one of control. Less than one minute per lesson is spent by teachers in using materials of any kind. Lessons are therefore primarily oral. Given that young learners have limited concentration spans, this is not a very effective technique for transmitting knowledge or understanding. Teachers may, of course, consider that the written materials that they have are not very suitable for use in the classroom. More than 10% of lesson time is spent by teachers doing nothing, a figure that was almost certainly reduced by the presence of observers.

8. **How learners talk**: Mostly they do not. Learners are silent for 60% of the lesson. For one third of the lesson, they engage in very closed forms of verbal interaction, either chanting or answering closed questions posed by the teacher. For only just over one minute per lesson do learners use their own words, either in conversation with each other about the lesson or in asking the teacher to clarify the task. Learners do not therefore get opportunities to enhance their verbal skills within the lesson. They do not use their own language but follow the teacher's lead at almost all times. This is particularly unfortunate when learners are studying a language, but it will probably also affect their performance in all other areas of the curriculum where verbal reasoning skills and the capacity to frame arguments should also be important.

9. **What learners do**: Mostly they are passive. For half the time they are listening to the teacher, while for another 10% of their time they are doing nothing. Given the concentration span of young learners, it is very probable that a considerable proportion of the time they are listening to the teacher should also be classified as doing nothing. Most of the rest of the time is spent in mechanical activities: copying off the blackboard or in doing exercises in English and mathematics. The latter are undertaken as a whole class, and are therefore exercises for which there is only one right answer. Processing skills are not or only minimally required. Learners were given opportunities to write in their own

words in virtually no classrooms. This is unfortunate. Writing in one's own words has been shown to be significant for neurological development as well as providing skills that underpin practically the whole of the curriculum

10. Throughout the five states, there is a default lesson, which starts with an extended exposition by the teacher. As the lesson proceeds, more and more time is spent on exercises. There is little summary or discussion of the meaning of the lesson at the end.

11. **Options for the future**: It is necessary to develop teacher training strategies which: (a) improve whole class teaching, particularly by developing enhanced questioning techniques; (b) promote the capacity of teachers to enable learners to write in their own words; (c) provide materials which develop a greater range of skills through the use of exercises; (d) provide reading materials (and training in their use) for young learners to combat the purely oral culture; and (e) provide guidance on assessment.

Introduction

12. In recent years, there has been a major shift in the Education for All (EFA) debate from what was an almost exclusive concentration on issues of access and enrolment toward a commitment to enhance the quality of education. Policy makers have come to recognise that what children learn and how they learn it is central to how education systems should be planned.

13. However, the commitment to quality has not yet been accompanied by adequate planning mechanisms which could be used to enhance quality. Part of the problem is that the word 'quality' is often left undefined or inadequately defined. Much of the problem stems from an inability to grapple with the central issue of teaching and learning, i.e. pedagogy. Many project logframes contain input and output measures but omit measures of the process by which inputs are translated into educational outputs in the classroom.

14. In collaboration with state governments, ESSPIN is seeking to remedy this deficiency. The two most important factors influencing the degree to which children learn are:

- the subject matter knowledge of the teacher: Kwara State sponsored a study in 2008 and the other ESSPIN states will follow in 2010
- the pedagogic skill whereby she enables children to learn: this report deals with elements of how teachers teach and how learners learn across the five ESSPIN states

15. The report consists of the following parts:

- Outline of the methodology, including the design of the observation instrument that was used, the sample, the pilot and the conduct of the main survey
- Discussion of the results in the five states
- Main conclusions and recommendations, including the potential use of the baseline

- Three appendices on: instruments and definitions; validity and reliability; and selected descriptive of the classrooms observed

Methodology

Instrument

16. The methods by which teachers enable children to learn are collectively described as pedagogy. The design of this study is based on the following definition: "Pedagogy is the observable act of teaching together with its attendant discourse of educational theory, values, evidence and justification. It is what one needs to know, and the skills one needs to command, in order to justify the many different kinds of decisions of which teaching is constituted".

17. This definition distinguishes what we can observe in the classroom from the assumptions, intentions and values which the teacher brings to the classroom. This study is only concerned with the observable acts of teaching.

18. There are broadly two approaches to classroom observation.

- Observations using qualitative techniques involve tailor made design, extensive note taking in the classroom and the presentation of evidence using words (not numbers). This method is very powerful for investigating areas of classroom practice that cannot be described numerically (such as the values held by a teacher or her conception of what constitutes a good teacher).
- The second type of classroom observation, and one which has been used here, is called systematic observation. It involves the selection of common features of teacher and learner behaviour. The frequency with which each type of behaviour occurs is then measured by recording observations at specified time intervals. In this survey it was every four minutes. The frequency of each type of behaviour was then calculated to produce a statistical profile of teacher and pupil behaviour in each class.

19. A total of 23 behaviours for teachers and 21 behaviours for learners were selected. These were discussed thoroughly with the education quality specialists leaders from each state, and further discussed and trialled with teacher trainers who participated in the pilot. The behaviours capture three of the principal processes taking 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.

20. In selecting the categories of behaviour, the following principles were observed:

- They had to be sufficiently numerous to ensure that observers were able to record a correct observation every four minutes for both teachers and learners. If too few

categories of behaviour were selected, observers would be obliged to leave blanks in their observation sheets, which would mean that we would not obtain a comprehensive profile of each lesson.

- The categories of behaviour would range from those which can be readily observed in a traditional classroom, to those that can only be found in highly interactive settings. While we had correctly anticipated that few observations would be made against the latter categories, it was felt important to include them for two reasons. Firstly, if state governments supported by ESSPIN succeed in introducing a wider range of teaching practice into schools, we will be able to capture the results in any subsequent survey. Second, we do not have a prescribed formula for good teaching and learning. However, we can say that a highly competent teacher will use a very wide range of methods in order to accommodate the different learning styles of children and in response to different learning objectives.

- Different countries have different pedagogic traditions because both teachers and learners bring their own culture to the classroom. However, it is unlikely that our instrument is biased towards any particular culture and would be therefore inappropriate for Nigeria. First, the instrument is based on the aspirations and experience of both ESSPIN state team quality specialists and a wide range of teacher trainers who participated in the pilot. Second, it is also true that as far as we know human beings in any culture learn in remarkably similar ways. There is no reason to suppose that an instrument which includes a very wide range of teaching and learning variables will be culturally biased.

21. The advantages of the instrument are as follows:

- The method is far less technically demanding for an observer than more qualitative methods. An observer does not necessarily require any detailed knowledge of how classrooms function (although as we shall see below, some knowledge is very helpful), but merely has to be trained in the precise definition of each category of behaviour in the observation schedule.

- Precisely the same method can be employed for all schools in the baseline and any subsequent surveys. Being based on numerical frequencies, changes can be measured over time and between schools and states. This will enable us to measure the progress that has been made by the states supported by ESSPIN.

22. The present instrument also has several limitations, the most important of which are that:

- There is no gender dimension. While it was technically feasible to have introduced means of tracking the degree to which girls and boys participated in the lesson, this would have complicated an unfamiliar instrument still further and risked reducing the accuracy of the data that was obtained.

- There is no attempt to measure the number of children who participated in any given lesson. This would have been feasible but would have risked the accuracy of the data.

Sample

23. A representative sample of 594 public primary and junior secondary schools was drawn randomly from the public school lists in five states: Jigawa, Kaduna, Kano, Kwara and Lagos. The selection process was hampered by the fact that the school lists were not sufficiently up-to-date, as the support that ESSPIN provides to the school census process was still at its early stages. For the following three reasons, the number of schools with usable observations was lower:

- A small number of private schools that were included by mistake have been dropped.
- A number of schools were no longer operating particular classes or at all.
- In some cases, the class and lesson observed were not recorded and cannot be used.

24. Note that in the three states where ESSPIN is targeting specific LGEAs in the first two years of the implementation phase (Jigawa, Kaduna and Kano), the sample was stratified. A random sample was drawn from two sub-groups of schools: those located in ESSPIN-targeted LGEAs and those in other LGEAs. This stratification was made in order to enable a comparison of teaching and learning behaviour in the future between schools that have benefited directly from ESSPIN activities and other schools[1].

25. In each primary school, two lessons were observed: one in Class PRY2 and one in Class PRY5. If one lesson observed was in English, then the other one was in mathematics. Similarly, in junior secondary schools, two lessons were observed in Class JSS2 in English and mathematics.

26. In total, there are usable observations from a sample of 505 schools and 1008 lessons. The table below shows the distribution of lessons observed:

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[1] It should be noted that at the time when the sample was drawn, only the targeted LGEAs were known. However, not all schools within an ESSPIN-targeted LGEA need necessarily benefit directly from an ESSPIN intervention. The selection of schools within a targeted LGEA that would benefit directly only took place after this sample was drawn.

Table 1   Distribution of lessons observed by class, subject and state

State		PRY2		PRY5		JSS2	
		Maths	English	Maths	English	Maths	English
Jigawa	Targeted	18	21	18	20	6	6
	Non-targeted	18	18	16	17	10	10
Kaduna	Targeted	31	26	27	25	6	6
	Non-targeted	36	25	25	32	6	7
Kano	Targeted	19	19	18	17	3	3
	Non-targeted	59	40	40	56	7	7
Kwara		31	26	24	31	15	15
Lagos		30	27	26	31	17	17
Total	Targeted	68	66	63	62	15	15
	Non-targeted	174	136	131	167	55	56
	All	242	202	194	229	70	71

27. The survey obtained some basic features of the classrooms, in particular: the proportion of teachers with a textbook and a teacher's guide; whether teachers had any poster or chart to work with; whether children's work could be seen on the wall; and whether children had textbooks and exercise books. A table summarising these features by state is included in Annex C. The following points provide an insight into the classroom conditions:

- In over 80% of primary school classrooms observed in Jigawa, Kaduna and Kano, few or no children had the relevant textbook. The same was true in only about a third of primary school classrooms observed in Kwara and Lagos.
- In fewer than 10% of primary school classrooms observed in Jigawa, Kaduna and Kano was there evidence of children work on the wall. By contrast, the corresponding share was 33% in Kwara and 18% in Lagos.
- No more than 15% of primary school teachers had a teacher guide. The proportion was higher in Jigawa and Kano.

Survey

28. Pilot observations were organised to check the quality of the instrument and plan the training process. Ten observers were trained using a blend of techniques (including presentation, discussion, role play, exercises and footage of classroom activities) and trialled the instrument and the survey procedures in three schools in Kaduna. Participants later reflected on their experience of the pilot and helped make final changes to the instrument and the training programme. The observers were trained by two ESSPIN education quality specialists in each state. The provision of two trainers was essential to ensure that training was genuinely interactive.

29. The survey was conducted successfully between the end of May and the middle of July 2009. The most important features of the survey were the following:

- Two observers were used for each class: one to observe teacher and one to observe learners. While somewhat expensive in terms of resources, this approach, together with a successful training programme, led to an extremely accurate set of observations.

- The vast majority of observers were themselves teacher trainers. This was both essential (because observers needed to have a prior understanding as to how classrooms operated to operate the instrument intelligently) and beneficial (because many observers commented that experience of the survey helped them in their work, enabling them to look at classrooms in new ways).

- Monitors, usually government officials or school inspectors, were appointed to track the progress of the survey against agreed timetables and check that observers had spent a reasonable amount of time in each school. The approach was successful, particularly as it relieved ESSPIN education quality specialists of time consuming work.

- Completed forms were scanned by the Nigerian Bureau of Statistics to reduce the amount of data cleaning that was required.

- Data analysis was undertaken by the Nigerian Bureau of Statistics with assistance from the international consultant.

Findings

30. The debate about the use of 'traditional' or 'modern/progressive' teacher styles is often polarised, as if one method were inherently better than the other or as if there were general agreement on what constituted the difference between these different styles. The position taken in this report is that a good teacher will use a range of different methods. Without prejudging in quantitative terms, we should expect to see a reasonable balance of time spent between different approaches. A balance is important because of the need to tailor methods to different kinds of learning objectives and to accommodate the different styles with which children learn. However, a balance between different teaching styles is not achieved in the vast majority of Nigerian classrooms. Teaching or learning methods that involve learners in active thinking are highlighted throughout this report. It was the judgement of ESSPIN education quality specialists and teacher trainers who participated in the pilot that such methods should be actively promoted over the course of ESSPIN.

A. Classroom organisation

31. There are three main ways of organising a classroom: whole class teaching; learners working in groups or pairs; and learners working individually on their own tasks. The

following two tables present the evidence on classroom organisation. The results were obtained through parallel observations of teachers and learners and reflect each other.

Table 2 Distribution of time by type of classroom organisation, teachers (%)

Type of organisation	State					Total
	Jigawa	Kaduna	Kano	Kwara	Lagos	
Whole class teaching	98	100	97	96	93	97
Learners working in groups	2	0	2	4	4	2
Learners working individually	0	0	1	0	3	1
Total	100	100	100	100	100	100

Table 3 Distribution of time by type of classroom organisation, learners (%)

Type of organisation	State					Total
	Jigawa	Kaduna	Kano	Kwara	Lagos	
Working as a class – common task	98	100	95	94	94	96
Working as a class – individual task	2	0	3	5	4	3
Organised in groups or pairs	0	0	2	1	2	1
Total	100	100	100	100	100	100

32. All teachers need to organise learners for whole class teaching from time to time. Whole class teaching is often the most effective method of presenting new material or for ensuring that all learners in a class pay attention to a particularly important point. Moreover for teachers with large classes and overcrowded classrooms, whole class teaching may appear to be the only feasible way of organising the class. However, the extreme prevalence of whole class teaching as a method of classroom organisation raises several issues:

- However well it is managed, whole class teaching cannot offer the full range of learning experiences that are necessary for optimum cognitive development. Group work is very beneficial because it has been shown that when children communicate in groups both their cognitive and social skills are improved in ways that other types of learning do not match. Likewise, children need opportunities to work as individuals if their problem solving, process and analytic skills are to be improved.
- Whole class teaching is not appropriate for use in multi-grade classes, which are common in rural areas. In these settings, teachers face a wide range of student needs, ages, and outcomes. The lack of group or individual work will put children who live in remote and poorer areas at a disadvantage.

B. How teachers talk

33. There is an extensive research literature which shows the importance of teacher talk on the development of the child. Teachers can use their talk to promote thinking in the individual child or the class – or to shut down the possibility of independent thought. The

observation instrument used in the survey contained ten categories of teacher talk. The frequency with which each was recorded in classrooms is set out in the bar chart below. Each frequency is expressed as a percentage of time that the teacher spent on each kind of talk.

Table 4   Distribution of lesson time by type of teacher talking (%)

Type of teacher talking	State					Total
	Jigawa	Kaduna	Kano	Kwara	Lagos	
Silent	29	21	35	33	32	29
Telling, instructing, explaining or talking at whole class	35	40	35	37	36	37
Leading chanting or getting children to repeat what has been said	12	13	7	8	7	10
Asking closed question	13	18	11	10	8	13
Asking open question *	3	1	1	2	3	2
Talking to individual, group or pair *	4	6	7	9	9	7
Giving closed response to learner questions *	1	0	0	0	0	0
Giving open response to learner question *	0	0	0	0	0	0
Praising	2	1	2	0	2	1
Reprimanding	1	0	1	0	2	1
Total	100	100	100	100	100	100

Note: Categories marked with asterisk involve learners in positive interaction

Figure 1   Teacher talking involving learners in positive interaction, proportion of time (%)
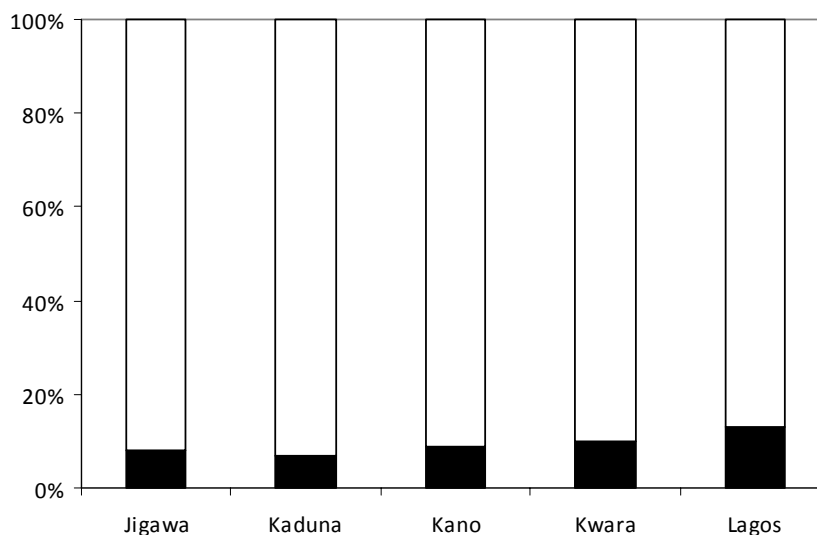
34. The results can be analysed two ways: (a) the degree to which the teacher is interacting with students (as distinct from simply directing talk at them) and (b) the degree to which teachers talk in an open or closed way. Both of these analyses focus on the degree to which the learner is being encouraged to think or being stimulated by the pedagogy of the

teacher. When a teacher is talking at the class, a necessary practice for some activities, the learner is in a passive, recipient position. Likewise when a teacher focuses on closed questions, the child is not being encouraged to think, work out the rules for himself, or explore different possible ways of approaching the same subject. The predominant feature of classroom teaching is that there is little genuine linguistic interaction or dialogue between teachers and learners and that knowledge is treated as closed, to be learned but not necessarily understood.

35. **No interaction**. For two thirds of the time (or 22 out of the 32 minutes of the average duration of a lesson) the teacher is either silent or talking at the whole class. It is important once again to note that even in the very best classrooms the teacher will talk at the class and, especially, be silent, allowing the learners to continue their tasks. However, the proportion of time that is absorbed by these two activities suggests that there is little scope for more fruitful interaction between teachers and learners.

36. **Closed interaction**. Teachers leading chanting and teachers asking closed questions are activities totally directed by the teacher where the learner has no chance of thinking for herself but merely responds by rote at the teacher's direction. In both of these activities the verbal interaction between teachers and learners is of a very restricted kind. Both activities are linked to 'drilling' in which there is an initiation-response-feedback sequence which centres on what have been termed 'test' questions to which there is only one possible answer and which the student must correctly remember, work out or guess. Together these activities amount to almost a quarter of time spent in classrooms or about 7 minutes per lesson. These 'test' questions are very different from authentic questions which encourage students to think for themselves, and which research has shown to be much more likely to lead to successful learning and genuine understanding.

37. **More positive interaction**. More positive types of interaction (highlighted with an asterisk in Table B1) involving discussion or open exchanges between teachers and students (or student and student) to explore information and ideas and to solve problems and the use of dialogue to guide and prompt the handover of information or understanding have greater power to stimulate cognitive development and understanding. In the average lesson, the time spent on these forms of interaction amount 10 percent (or 3 minutes).

38. About half of this time is spent by the teacher talking with individuals or groups of students. This is excellent practice in principle but the instrument cannot make any judgements as to how effective this interaction is. Given that most of the lesson has been managed in a closed manner, it is possible that the quality of this discussion is fairly limited as it is improbable that the teacher will adopt a totally different mode of dialogue with the learner in such circumstances. It is probable that the teacher will be giving mostly closed responses to learner queries.

39. The other types of interaction (asking open questions and giving – open or closed – responses to learner questions) occupy very little time but are crucial. When the teacher is engaging in these activities she is prompting the learners to think rather than giving them a closed set of facts to memorise. It is important to stress that encouraging learners to think is not necessary only in the upper levels of education. For example, if learners in PRY2 are to begin mastering literacy and numeracy, they should be developing an understanding of general principles as well as the ability to recognise individual words or add or subtract specific sums. General understandings such as the ability to decode words that have not been encountered before based on an understanding of how a language functions is prompted only when the learner is given a chance to explore and to think for themselves.

40. **Other interaction**. Praising occupies more time than reprimands, suggesting that teachers are generally positive in their attitude to wards their learners. Both praise and reprimands are more common in PRY2 than other grades. This could be because both are used as a means of encouraging appropriate behaviour rather than an instrument of learning.

C. What teachers do

41. In order to understand how teachers teach, we must look at what they do as well as what they say or how they talk. The figure indicates in white the proportion of lesson time spent on actions that are to be found in a traditional classroom (but to a lesser extent in classrooms where learners are being offered a full range of learning experiences); and in black the proportion of time where the teacher is (at least potentially) seeking to promote thinking, social and communication skills, and problem solving abilities.

Table 5   Distribution of lesson time by type of teacher activity (%)

Type of teacher activity	State					Total
	Jigawa	Kaduna	Kano	Kwara	Lagos	
No pedagogic activity	8	12	16	8	13	12
Observing class or student working on blackboard	22	18	17	13	13	17
Writing on or reading from blackboard	42	42	39	37	28	39
Demonstrating or displaying work	10	12	8	8	14	10
Moving around amongst students	14	9	13	22	20	14
Participating in group discussion *	0	4	3	8	2	3
Using textbook *	2	3	1	2	5	2
Using improvised materials *	0	0	0	0	3	1
Using supplementary readers, charts, maps *	0	0	3	0	1	1
Marking books	1	0	0	2	1	1
Total	100	100	100	100	100	100

Note: Categories marked with asterisk involve learners in positive interaction

Figure 2   Teacher activities involving learners in positive interaction, proportion of time (%)
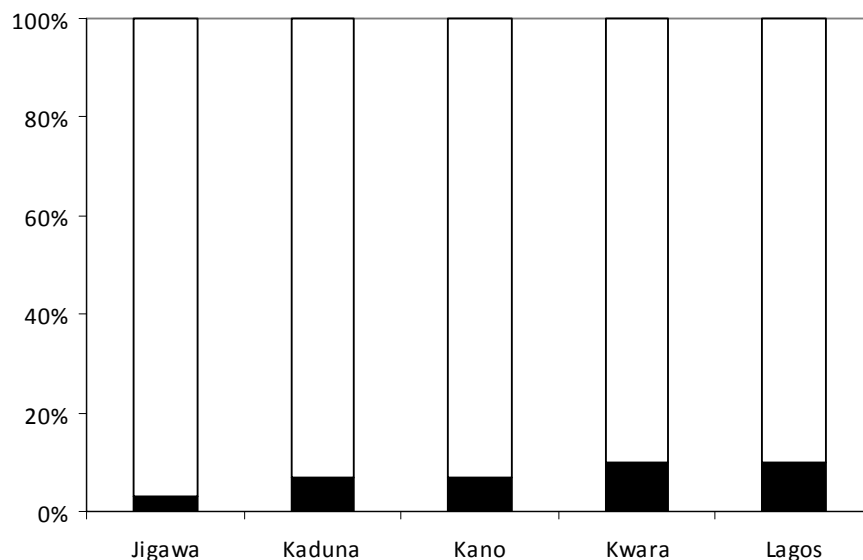
42. **Domination of the blackboard**. The most striking feature of what teachers do is that for more than half of their time (or 18 minutes in an average lesson) teachers are either working on the blackboard, observing a student working on the blackboard or observing the class from the front near the blackboard. This is partly to be expected a considerable number of teachers do not have access to textbooks. It is also true that the blackboard is a very important tool for the teacher which, when well used, can promote learning very effectively. However, if we refer back to the kind of talk which teachers employ, which is very heavily didactic and little used to prompt open, thoughtful responses from learners, we can be fairly certain that work on or with the blackboard is of the same nature. The blackboard at present serves to reinforce the teacher as the centre of the lesson, rather than being used as a tool to stimulate thinking amongst the learners.

43. **Little use of textbooks and other materials**. The heavy use of the blackboard contrasts sharply with the relatively slight attention paid to textbooks or any other kind of material. About 4% (or one minute) is spent in the average lesson using materials of any kind. This is partly explained by the lack of textbooks in the hands of either teachers (only two thirds of teachers had the textbook) or learners (only in a quarter of classrooms did most or all learners have their own textbooks). In classrooms where most or all learners have textbooks, the proportion of lesson time spent using textbooks is more than double compared to other classrooms (4.5% versus 1.7% of lesson time). However, it is believed that even then they are mainly used to set homework and not as a teaching tool.

44. There is an important policy related issue here. We cannot tell from this survey why teachers are not using textbooks in English and mathematics. If the reason is that the teachers would like to use the books more but do not know how to use them, pre-service and in-service teacher training would improve the situation and enhance the quality of

learning in the classroom. However, the teachers may feel that the textbook has insufficient useful material for them to use. They might well prefer to put the textbook material for the lesson on the blackboard, particularly as in the majority of classes there are many students without access to their own books.

45. **Moving around the classroom**. This is an important part of the activity of any teacher, and a necessary, if not sufficient, condition for first rate pedagogy that is in any sense learner centred. It is therefore very positive that teachers do not remain rooted to the front throughout the lesson but they move around the class for about 14% of their time (or 4 minutes per lesson). The question arises as to the purpose of this activity. Once again the nature of teacher talk is strongly suggestive: the analysis indicates that teachers spend only 7% of their time (or 2 minutes per lesson) talking with individuals, groups or pairs. Some of this talk will be from the front of the class. It is therefore safe to conclude that most teachers move silently about the classroom, probably as a disciplinary or control measure, rather than using their mobility to interact on a more individual basis with learners. However, some individual interaction goes on, and the practice of patrolling the classroom can readily be turned to more positive uses.

46. **No pedagogic activity**. For an average of 4 minutes per lesson, the teacher was observed to engage in no pedagogic activity at all. This is almost certainly less than normal, as it is to be expected that the presence of an unexpected observer in the classroom would tend to reduce waste of time to a minimum.

D. How learners talk

47. Learner talking behaviour mirrors that of the teacher talking behaviour.

Table 6 Distribution of lesson time by type of learners talking (%)

Type of teacher talking	State					
	Jigawa	Kaduna	Kano	Kwara	Lagos	Total
Silent	64	60	62	67	48	62
Chanting or repeating what teacher has said	15	15	14	13	21	14
Answering teacher (closed question)	15	20	16	15	20	16
Answering teacher (open question) *	2	2	2	3	3	3
Questioning teacher to clarify task *	1	1	1	0	1	1
Talking in groups or pairs about the lesson *	1	0	1	2	1	1
Reporting results of group discussion *	0	0	0	0	1	0
Chattering	2	2	4	0	6	3
Total	100	100	100	100	100	100

Note: Categories marked with asterisk involve learners in positive interaction

Figure 3   Learner talking involving positive interaction, proportion of time (%)
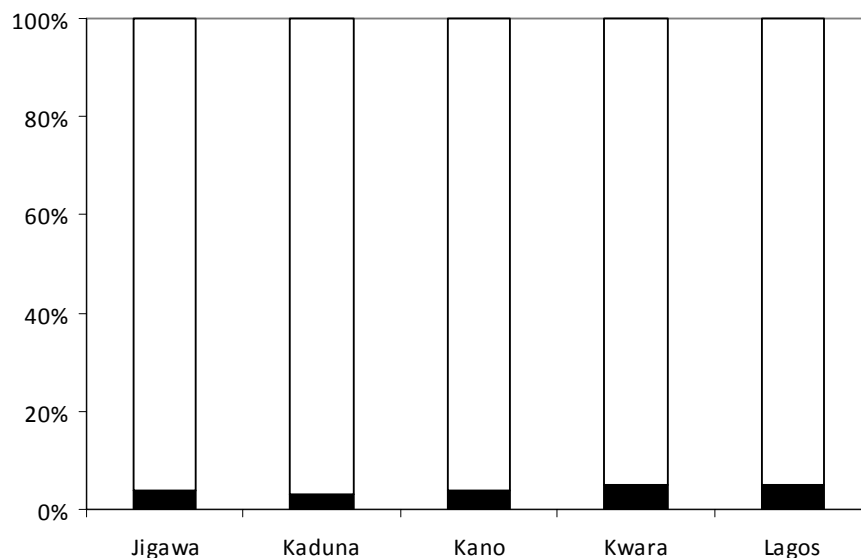
48. **Silence**. The most important feature of this table is the amount of time learners are silent: more than 60% of the time (or 20 minutes in an average lesson). It is not straightforward to interpret this figure, as there are different ways in which learners can be silent in the classroom. They could be attentively following a presentation by the teacher; working in silence on an exercise set by the teacher or on their own individual work; or simply dreaming as the teacher drones on. However, this represents a considerable period of passivity for learners, particularly for PRY2 children.

49. **Drill work**. If learners are not silent, it is probable that they are engaged in drilling activities, either chanting or answering closed questions posed by the teacher. Children spend 30% of their time (or 10 minutes per lesson) on these activities. Chanting gives a role to all children in the class and any teacher is bound to ask a number of closed questions to learners. However, drill work is of limited value to learning, its main purpose being to reinforce rote learning. It cannot encourage understanding of what is being taught. Likewise, while some closed questions have their place in any lesson, the balance between open and closed questions does not seem to be appropriate.

50. **Open talk**. In open talk the learner is expressing himself in his own words. This could be as part of group discussion, when the teacher has prompted the learner to express his own thoughts in an open manner or when the teacher has created an atmosphere in the classroom in which the learner feels able to ask her own questions in her own words. In all these occasions, the learner is practicing the use of their own language, a process that is essential for cognitive and linguistic development. Open talk constitutes only 5% of total classroom time or just over one minute per lesson. As it can reasonably be assumed that improved learning achievement cannot be expected unless and until learners are

given more opportunities to express themselves verbally in their own words, we will be tracking the trends in these values with particular care over the course of the project.

51. **Other**. One minute is spent in chatter during the lesson.

E. What learners do

52. Learner activities complement the observed activities of the teacher.

Table 7   Distribution of lesson time by type of learner activity (%)

Type of teacher activity	State					Total
	Jigawa	Kaduna	Kano	Kwara	Lagos	
Copying from blackboard	6	6	10	8	7	8
Listening to teacher or learner on blackboard	65	48	54	47	39	54
Reading from textbook or other material	4	10	4	9	6	5
Doing exercise set by teacher	9	18	12	21	22	14
Doing exercises or mathematics activities *	6	10	7	9	9	8
Writing in own words *	0	0	0	0	1	0
Group discussion *	0	0	0	0	1	0
Group presentation *	0	0	0	0	1	0
Singing, dancing, drawing, making things	1	0	0	1	0	1
No activity	9	8	12	4	14	10
Total	100	100	100	100	100	100

Note: Categories marked with asterisk involve learners in positive interaction

Figure 4 Learner activity involving positive interaction, proportion of time (%)
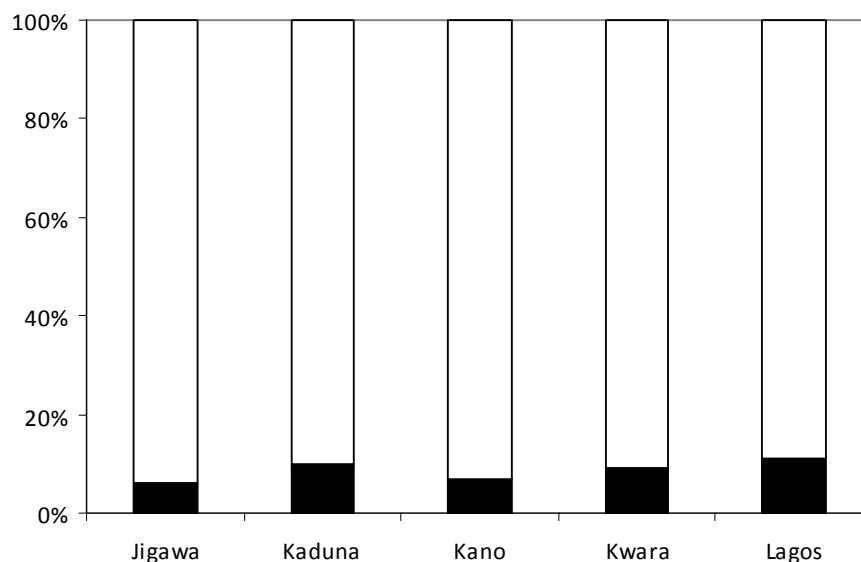
53. More than half of the time (or 17 minutes per lesson) is spent passively by the learners listening to either the teacher or a learner working on the blackboard. These two categories have been grouped together because when a student is working on the blackboard, they are in effect acting as a substitute teacher – the rest of the class is passive. A further three minutes per lesson is spent copying from the blackboard, while three more minutes per lesson are spent doing nothing.

54. Much of the remaining time is spent doing exercises or mathematics activities. These are essentially activities initiated by the teacher but at least involve learners in activities which they have to complete themselves. The vast majority of these activities are ones in which the whole class is undertaking the same task, for which there is likely to be only one right answer. We know this because of the data gathered under Section A of this instrument.

55. The minimal amount of time that remains is spent by learners in activities that could be interpreted as having a strong potential for cognitive development. However, it must be stressed that practically no time is allocated to learners for writing in their own words. Writing in one's own words has been shown to be significant for neurological development as well as providing skills that underpin practically the whole of the curriculum. Learners are severely disadvantaged because they do not have the opportunity to practice and develop their own use of language.

56. Learners (as well as teachers as seen above) use textbooks and other materials very infrequently during the lesson, apart from any use that is made of textbooks to work on exercises. Of the total of four minutes used for reading from textbooks, most will be spent with the class listening to a single student reading from the book. The lack of textbook usage during the lesson is partly because learners lack textbooks as seen above.

Course of a lesson

57. The interpretations that we have offered above can be strengthened if we consider the structure of a standard lesson. Not unusually, lessons display strong common characteristics which are a product of both teacher training and the evolution of practice in schools. The figure below shows how the typical lesson is developed.

Figure 5   Learner activity during the course of a lesson, proportion of time (%)
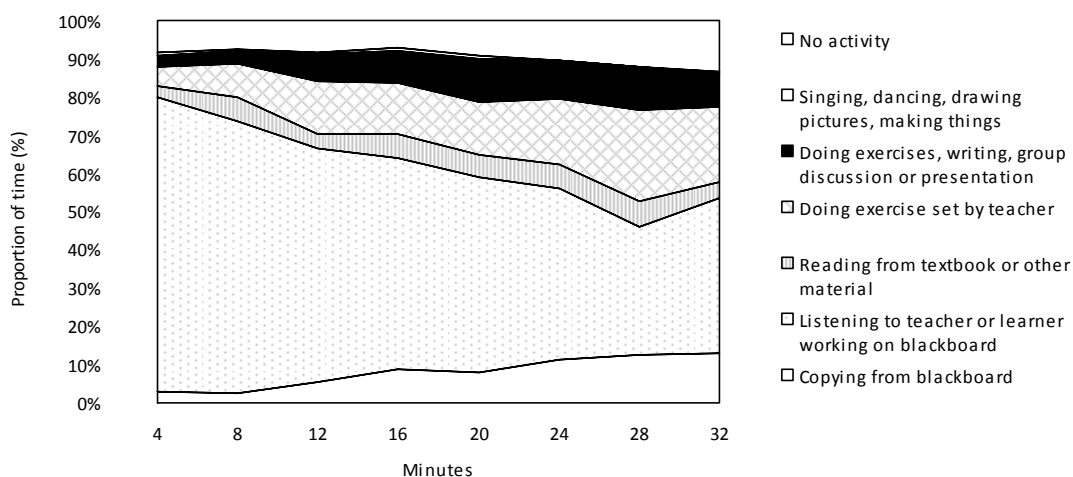
- During the first ten minutes, learners are listening to teachers in more than two thirds of the lessons observed. As the lesson proceeds there is a steady decline in the amount of time learners spend listening to teachers as other activities become more important.
- After about 16 minutes (or half way through the average lesson) there is a steady increase in the amount of time devoted to exercises set by the teacher, which continue unabated until the end of the lesson
- Towards the end of the lesson, there is a steady increase in the amount of time spent on copying from the blackboard, partially in preparation for doing exercises and partly to take down homework.

58. What lessons can we draw from this chart?

- In more than half of the lessons, the teacher will have spoken almost continuously for the first ten minutes. While that may be just acceptable in a junior secondary school, the attention span of primary school children will have been exhausted long before the teacher has finished talking. There would appear to be an urgent need for the children in primary schools to stop listening earlier than half way through the lesson and initiate exercises or other activities at an earlier point in the lesson.
- The range of activities undertaken by the learners is very restricted. Greater variety in the lesson would retain their attention for longer and enable activities to start earlier.
- There appears to be no summing up by the teacher, either by getting the class to listen to a summary, or by eliciting from the class.

59. The data enable us to track both the degree to which learners are silent and the degree to which teachers are talking throughout the lesson. Not surprisingly there is an almost perfect correspondence between the two activities. This demonstrates that silence

amongst learners is overwhelmingly a passive activity (listening to the teacher) rather than the silence that results from students concentrating on their own work.

Other comparisons

60. The discussion so far has focused on the differences, if any, in lessons between states. The following paragraphs discuss differences, if any, between subjects (English and mathematics), classes (PRY2 and PRY5) and schools in targeted LGEAs.

61. **Differences between subjects**. There was surprisingly little variation in the way teachers talked in the case of mathematics and English respectively. Teachers of English spent more time leading chanting or getting learners to repeat words or phrases.

62. There were no significant differences in the activities of mathematics and English teachers, although the former were slightly more prone to working on the blackboard while the latter were more likely to move around the classroom.

63. **Differences between classes**. There were significant differences in the manner in which teachers talked in the classroom between the three classes sampled, but unsurprisingly all remained within the dominant didactic paradigm.

Figure 6   Differences in teacher talking by class, proportion of time (%)
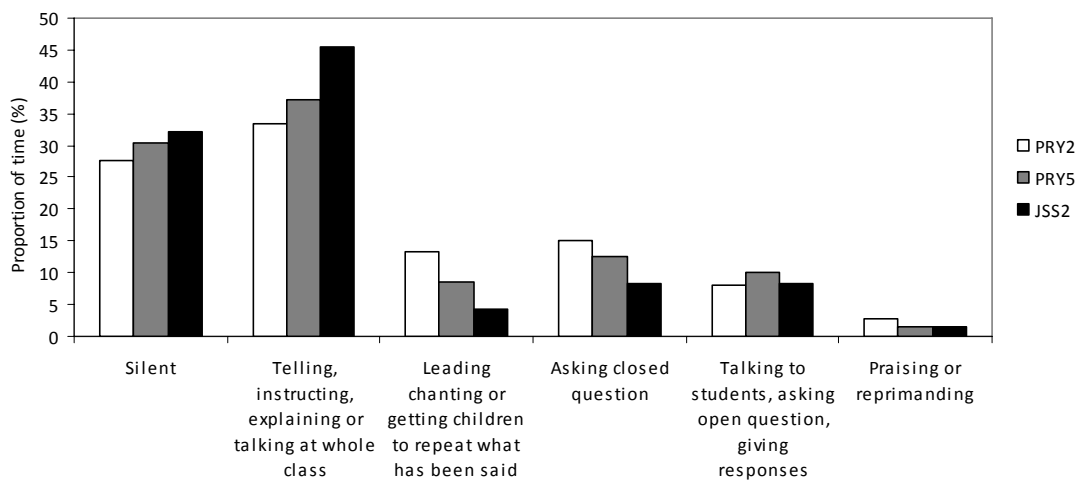
- PRY2 teachers were less likely to remain silent than their counterparts elsewhere but made up the time with considerably greater use of chanting, repetition, and drill work with closed questions. PRY2 teachers were least likely to ask authentic open questions which suggests that they might have a fairly low estimation of the potential creativity and capacity to experiment of young children. It might well be worth exploring the ideas that teachers of young children have about their charges. This suggests that they might have a deficit model of young learners as empty vessels who need to be filled.

- PRY5 teachers exhibited similar patterns of talk to PRY2 teachers, except that they engaged in less chanting and repetition. Instead they were more likely to be silent than PRY2 teachers. They spent as much time on questioning the learners, but introduced more open questions than PRY2 teachers, with slightly less closed drilling.
- JSS2 teachers talked at the class far more than their PRY2 and PRY5 counterparts (almost 50% of the total time) but, somewhat surprisingly, asked learners fewer questions of any kind. In sum, JSS2 teachers talked more, but drilled less.

64. Patterns of teacher behaviour between the grades were remarkably consistent. Amongst the relatively small differences were;

- PRY2 teachers were more likely to remain at the front and exercise control by observing the class from their chair or by standing by the blackboard. As the age of children increases, teachers are more likely to move around the classroom.
- However although JSS2 teachers are far more likely than PRY teachers to move round the classroom, they spend less time in talking to individual children while so doing.

65. **Differences between schools in targeted/non-targeted LGEAs**. Unexpectedly, there were statistically significant differences in teacher talking and teacher activity between schools located in targeted LGEASs and schools located in non-targeted LGEAs.

Figure 7 Differences in teacher activity by targeted/non-targeted LGEAs, proportion of time (%)
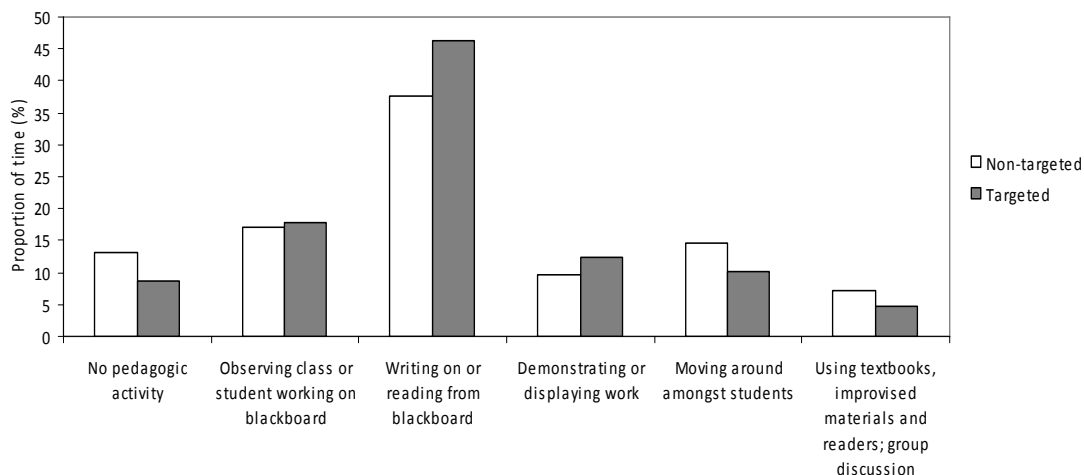
- Teachers in targeted LGEAs tend to be silent and to talk at the whole class for longer, while they are less likely to lead the chanting and to ask closed questions.
- Teachers in targeted LGEAs tend to be less likely to carry out no pedagogic activity but more likely to write on or read from the blackboard.

66. However, there is no significant difference in the amount of time spent talking or carrying out activities that involve learners in positive interaction; the general pattern is followed.

Summary

67. In terms of **class organisation**, the entire time is devoted to whole class teaching. A target might be to reduce the amount of time spent in whole class work to 75%. This would enable learners to engage in a slightly greater variety of learning experiences and increase the scope for improving learning achievement.

68. The main features of **teacher talk and activity** across the five states are the following:

   - There is little verbal interaction: Two thirds of the time spent talking at learners or being silent.
   - Drilling predominates: The number of closed questions is more than eight times higher than the number of open questions, while more than 10% of time spent on chanting.
   - However, a reasonable amount of time spent on talking with individuals or groups. The quality of this discussion may not be very high, given the predominance of closed questioning, but is a practice with great potential to improve learning.
   - More than half the time spent on or near the blackboard, which illustrates the degree to which lessons are centred on the teacher.
   - There is a high proportion of time during which the teacher is engaged in no pedagogic activity. This is correlated with periods when learners are chattering or doing nothing.
   - However, teachers do spend a good proportion of time patrolling the classroom. This is used only partially for positive interaction with learners but in principle is an activity on which to build.
   - Only a minimal amount of time is spent using textbooks, improvised materials or aids to enrich lesson content.

69. The main features of **learner talk and activity** across the five states are the following:

   - Learners are passive: For nearly 60% of the time learners are silent and for more than half the time they are listening to the teacher. There is certainly a place for learners to be engaged in this way but given the limited concentration spans of young learners, particularly in primary school, these amounts of time are excessive.
   - Most of the rest of learners' time is spent chanting, repeating what the teacher has said, doing drill work or doing exercises set by the teacher. The latter will not have much scope for learners to think as we have seen that for 97% of their time they are being taught as a whole class and that, therefore, all children will be doing the same exercise. Differentiation between learners is minimal.
   - For almost 10% of their time learners are engaged in no activity at all, although only a minority of this time is spent in chatter, clearly indicating that the problem is one of teacher management and organisation rather than any intrinsic issues of discipline.

Conclusions

70. The patterns of teaching and learning presented in this report are not very encouraging. There is insufficient variety of pedagogy to allow learners to achieve their learning potential. The uniformity of practice suggests that there is a strong culture established as to what constitutes an acceptable teacher and acceptable teaching. Reform of pre-service or in-service training will have to take this into account, and will also need to be aware of the unspoken assumptions in teachers' minds that sustain the teaching model.

71. A quantitative survey cannot explore the subjective meanings that teachers attach to the classroom process. Any teacher will have a view on what constitutes a good teacher; the kinds of behaviour that a good teacher will exhibit; what constitutes good teaching; and what constitutes good discipline and how to achieve it. These subjective meanings that a teacher brings to the classroom are highly influential in determining the kinds of teaching and learning that go on in a classroom and, equally important from the perspective of ESSPIN, what changes might be expected if teachers are offered in-service training.

72. Future analyses will focus on trends in each of these categories. If ESSPIN and any other government initiatives improve the quality of teaching, we would expect to see:

- a slight increase in the proportion of time devoted to questioning learners with a shift of balance from closed to open questions and a corresponding decrease in the practice of chanting
- more signs of dialogic teaching, in other words teaching where there are sequences of interchange between teachers and learners and in which the teacher is prompting learners to respond in an open manner after giving the matter some thought
- teachers moving around the classroom but using this movement for greater verbal interaction with learners and not for n silent patrol
- more time spent utilising written materials of all kinds and less time on purely oral transmission techniques

73. In terms of changes to learner behaviour, we would also expect to see:

- learners spending less time in silence and more time talking with each other and in open talk with the teacher – for example, asking their own questions to the teacher (suggesting whether learners are sufficiently confident to communicate their concerns to the teacher): such talk assists the cognitive development of children and is necessary if they are to sustain concentration on learning for most of the lesson
- the balance of responding to questions shift to answering more open questions
- more time spent by learners with a greater variety of written materials (and undertaking a wider range of tasks than at present)

- learners to be given an opportunity to practice writing skills by using their own words: greater facility with the written word will enable learners to perform better across the entire curriculum

74. There are strategies that can improve the quality of teaching and learning. The first option is to conduct a set of semi structured interviews with a small sample of teachers to explore crucial attitudes that influence their teaching style but largely remain hidden and unexpressed. The main purpose of the interviews will be to explore the most important factors underlying the remarkable consistency of teaching style observed by our survey. Amongst the issues that could be explored are:

- What is a good teacher?
- Why do I teach as I do?
- How best do children learn?
- Views about utility of textbooks and teacher guides
- Views about potential of children they teach
- Possibly, responsibilities outside work, journey times etc to establish the degree to which teachers can reasonably be expected to prepare outside the classroom

75. The second option will be to design approaches to teacher training that take into account the findings that have been presented above (combined with the Teacher Development Needs Assessment study of teachers' subject matter knowledge in five ESSPIN states). Opinions on the implications of survey findings normally vary but the suggestions below are offered as a contribution to discussions on teacher training in which ESSPIN is engaged:

- Teachers clearly feel comfortable with whole class teaching. As an initial step, it would therefore seem important to improve the quality of whole class teaching, as this would require the least fundamental change to practice. It would also reflect the limited resources available to many teachers. A fundamental part of the improvement of whole class teaching would be to improve the quality of dialogue with the class, particularly by posing more open ended questions, by drawing on the child's own experience and by promoting discussion between children in a whole class context.

- The importance of writing in ones own words is not sufficiently reflected in classroom practice. Teacher training (and teacher guide development) could develop simple strategies for enabling teachers to get children writing. Not only would this be important for stimulating learning but it would also break up the uniformity of the lesson. A further advantage of stressing writing is that the physical organisation of the lesson would remain as it is, allowing teachers to remain more in their comfort zone. Writing could be linked to the greater use of open ended, prompt questions in whole class discussion.

- Teachers are already comfortable in using exercises as a method of teaching, and have evolved partly efficient means of setting learners to work answering exercise questions. This suggests that it might be beneficial to provide teachers with improved exercises which combine simple closed problems with more demanding questions which require learners to apply knowledge (although constrained by teachers' current level of subject matter knowledge). Careful training as well as material provision would be necessary.

- Lessons at present are almost purely oral. Greater engagement with written materials by both teachers and learners is almost certainly essential. Given ESSPINs focus on literacy and numeracy, the provision of supplementary graded readers for PRY1 and PRY2 would be useful. The ability to read underpins the whole of the child's engagement with the curriculum. Current methods of teaching and learning which allow only minimal contact with the written word are not conducive to the development of fluent readers who have both mastered the techniques of encoding the written word but also the meaning of written passages. Reading with enjoyment and a desire to understand is key. Hence, the readers should be physically attractive, have genuine story lines, and prompt the child to imagine what comes next in the story.

- Even if some of the minimal suggestions made above are put into effect, teachers will soon become concerned by assessment. Currently nearly everything a learner writes is either right or wrong. More open modes of teaching will stimulate a variety of responses in learners which will require careful judgement when the teacher assesses the work. There will be greater emphasis on using assessment for guiding the learners towards improving their performance instead of simply marking answers right or wrong (see Black et al (2009) *Assessment for learning* for a very useful discussion)..

Annex A – Instruments and types of teacher and learner behaviour

Teacher instrument

TEACHERS CLASSROOM OBSERVATION SHEET   QuestN ☐☐

TEACHER BEHAVIOURS SECTION B	INSTRUCTION MINUTES									
	4	8	12	16	20	24	30	32	36	40
B 0 Teacher silent	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐
B 1 Teacher telling, instructing, explaining or talking at whole class	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐
B 2 Teacher talking to individual, group or pair	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐
B 3 Teacher leading chanting or getting children to repeat what he or she has said	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐
B 4 Teacher asking closed question	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐
B 5 Teacher asking open question	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐
B 6 Teacher gives closed response to learner question	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐
B 7 Teacher gives open response to learner question	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐
B 8 Teacher praising	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐
B 9 Teacher reprimanding	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐

TEACHER BEHAVIOURS SECTION C	INSTRUCTION MINUTES									
	4	8	12	16	20	24	30	32	36	40
C 0 No pedagogic activity	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐
C 1 Teacher observing class or student working on blackboard	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐
C 2 Teacher writing on or reading from blackboard	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐
C 3 Teacher demonstrating or displaying work	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐
C 4 Teacher moving around amongst students.	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐
C 5 Teacher participating in group discussion.	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐
C 6 Teacher using textbook	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐
C 7 Teacher using improvised materials	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐
C 8 Teacher using supplementary readers, charts or maps	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐
C 9 Teacher marking books	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐

INSTRUCTION

You must mark with X one box in section A, One box in Section B, one box in section C every 4 minutes

You will therefore make 3 X's in a row every 4 minutes
By the end of a forty minutes lesson, you will have made 30 X's

If your lesson last less than 40 minutes, finish at the last time interval (please see left hand column

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Learner instrument

Quest.B [ ] [ ]

LEARNER BEHAVIOURS		INSTRUCTION MINUTES									
SECTION C		4	8	12	16	20	24	38	32	36	40
C 0	Copying from blackboard	□	□	□	□	□	□	□	□	□	□
C 1	Listening to teacher (or learner working on blackboard)	□	□	□	□	□	□	□	□	□	□
C 2	Doing exercise set by teacher	□	□	□	□	□	□	□	□	□	□
C 3	Doing mathematics activities	□	□	□	□	□	□	□	□	□	□
C 4	Writing in own words	□	□	□	□	□	□	□	□	□	□
C 5	Reading from textbook or other material	□	□	□	□	□	□	□	□	□	□
C 6	Group discussion	□	□	□	□	□	□	□	□	□	□
C 7	Group presentation	□	□	□	□	□	□	□	□	□	□
C 8	Singing, dancing, drawing pictures, making things	□	□	□	□	□	□	□	□	□	□
C 9	No activity	□	□	□	□	□	□	□	□	□	□

INSTRUCTION

You must mark with X one box in section A, One box in Section B, one box in section C every 4 minutes

You will therefore make 3 X's in a row every 4 minutes
By the end of a forty minutes lesson, you will have made 30 X's

If your lesson last less than 40 minutes, finish at the last time interval (please see left hand column

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Types of teacher behaviour – Definitions

A. Classroom organisation

A1. Whole class	All children working on same task. Usually it will be the teacher who is talking. Sometimes it will be a learner talking to the class. Working as a class, all doing the same task, refers to times when the teacher is talking to the whole class ie the teacher expects the whole class to be listening or looking. This can sometimes be confusing because the teacher might be talking to an individual or group but doing it in a way that is intended to attract the attention of all the pupils in the class. This is the traditional classroom style, which me might see reduced in frequency (but never eliminated) as teachers adopt more learner centred approaches to teaching and learning. We must not forget that some teachers can use whole class teaching to enable children to learn well.
A2. Individual	Children working on their own tasks. Working as a class, but doing own work may appear to be similar to the category described above but actually is very different. All pupils will be seated at their desks (as when the teacher is talking to the whole class) but are actually doing their own work ie their task will be different to their neighbours. For example all children might be writing a story, but if it is their own story in their own words, they will be doing their own work. By contrast if the children are copying words or sums from the blackboard, they will be working as a class on the same task. The difference between the two categories is that in the second, the teacher is getting the children to think for themselves and create their own work as individuals.
	Imagine that you look at the exercise books of the children. If you think that what they are writing in their books (either words or sums) will be the same as their neighbour they will be working as a whole class; if different they will be working as individuals.
A3. Group or pair	If pupils are genuinely organised in groups (or pairs) it will involve some co-operation and communication between group members. The pupils will talk to each other or study material together. They will be talking about a task set them by the teacher. Also included here is when a learner is reporting back the results of group discussion. The rest of the class will be listening, but the presentation is a part of group work. The learner will be talking about the experience of he learners in their own words.

B. How teachers talk

B0. **Teacher silent**	The teacher may be at the front of the class observing pupils working. He or she may be listening to a learner making a presentation on the blackboard or reporting the results of group discussion. The teacher may be amongst the learners listening to a group discussion or listening to a learner explaining something. The teacher may be marking books. These are all very positive things. The teacher might also be out of the room, reading a newspaper or staring out of the window. If this is the case, you will record B1 and then C1 for activity.**In all cases the teacher will not be saying anything.**
B1. **Telling, instructing, explaining**	**Teacher talking at the whole class**; not questioning or giving feedback. The teacher may be instructing, explaining, describing something, or saying what the students have to do next.
B2. **Teacher talking to individual, group or pair**	**The teacher will have moved away from the front of the class and be in the middle of the learners**. She or he will be joining in group discussion, and talking, or helping individual students or pairs of students. She or he could be discussing work that the learner is doing in their exercise books. Note if the teacher is merely observing a discussion without speaking, or looking over the shoulders of learners without saying anything, B1 should be used
B3. **Leading chanting or repetition**	Teacher asks learners to **repeat** what he or she has said. Learners will be engaged in rote learning. Very often the learners will be chanting. At other times they will be merely repeating what the teacher has said.
B4. **Questioning; encouraging individual response; closed question**	**A closed question is one for which there is only one right answer**. Usually the teacher is asking children to remember facts. For example, 'What is the capital of Nigeria?' or 'what is the area of this rectangle?' are closed questions. The question can be directed to the whole class or to an individual student.
B5. **Questioning; encouraging individual response; open question**	**An open question is one for which there are many possible right answers**. Often the teacher is asking the learners to use their imagination or to analyse. For example, 'Why is Abuja the capital of Nigeria?' or 'How did you calculate the area of that rectangle?' are both open questions. The learner has to choose what to say. There will be several different ways of responding. The question can be directed at the whole class or to individual learners.
B6. **Closed feedback**	**Teacher answering learners in a closed way; closing conversation**. For example, a learner may ask 'Why is Abuja the capital of Nigeria? The teacher may not reply; may say talk to me later; or may say 'because it is in the middle of the country.' In each case the dialogue between teachers and learners is closed.
B7. **Open feedback**	**Teacher answering learners in an open manner; inviting further discussion or thought by the individual learner or the class**. For example, in answer to the question why Abuja is the capital of Nigeria, the teacher may say ' Some people say that it is because it is in the middle of the country, but what do you think?. There are other reasons as well. Remember what we did in social studies last week…' The teacher is using the students question to explore the issue further.
B8. **Praising**	Could be individual student, group or class. Could invite class to clap. Could be words of encouragement to the class or an individual
B9. **Reprimanding**	Maintaining discipline or telling pupils to follow rules. Usually negative ('Don't do that' or 'be quiet').

C. What teachers do

C0. **No pedagogic activity**	**Teacher observing class from front, but not talking; doing nothing; out of room; reading a newspaper or book**. At the beginning of a lesson, the teacher may not be organised and may not have given any instructions to the students who will be waiting for the lesson to start. During the lesson, the teacher may be observing the class from the front, but not saying or doing anything. He might be reading a newspaper or be out of the room. He might be talking to a visitor (e.g. the head teacher). At the end of the lesson, the students may have finished their work early and everybody is waiting for the time they can leave the classroom
C1. **Teacher observing class or observing learner working on blackboard**	The teacher will usually be at the front of the class, and will often be talking. She or he could be explaining, instructing, telling or describing something. **She or he will be observing students. Her eyes might be roving round the classroom making sure that all learners are paying attention**. The teacher could also be observing what a learner is doing on the blackboard. The teacher could be at the front of the class, not saying anything, observing learners working on an exercise, in group work, doing activities. The teacher could be listening to a learner reading from a textbook, reading a story from their exercise book. This is not to be confused with C0 when the teacher may be at the front of the class but not talking or doing anything related to the lesson. She or he will not be observing what the learners are doing.
C2. **Writing on or reading something from the blackboard**	This could involve copying writing or mathematical exercises from the textbook, writing the teachers own words or maths for the learners to copy; writing homework assignments etc. It could involve watching a learner work on the blackboard to the teacher's instructions. It could involve the teacher reading what has been written n the blackboard.
C3. **Demonstrating or displaying work**	Sometimes this will involve the teacher writing on the blackboard and might therefore be confused with C1. However this time the teacher is **using the blackboard to explain a concept or problem and therefore increase learner understanding**. The teacher could be showing how to solve a mathematics problem (instead of just copying the problem onto the blackboard). The teacher **might be discussing a piece of written work on the blackboard** (to illustrate a grammar or spelling point or even to discuss the way in which the piece is written). The teacher might also be **showing the class a page from the textbook and explaining what they have to do next**. The teacher might be explaining something from a learner's exercise book and explaining a point.
C4. **Moving around amongst students**	The teacher has moved away from the front and **is moving amongst the students,** probably looking at the work of individual students, groups or pairs. He or she will be available for questions. The teacher will be **silent,** letting the students work uninterrupted. She will be observing students working.
C5. **Participating in group discussion; assisting individuals or pairs**	The teacher will not be at the front of the class, but **amongst the students**. The teacher will be listening to students or **joining in group discussion**. The teacher might be **working with individual students**, possibly discussing the work that they are doing in their exercise books, or listening to any problems that they might have.
C6. **Teacher using textbook**	The teacher will be explaining something from the textbook; explaining a task in the textbook; reading from textbook.
C7. **Teacher using improvised materials**	**Teacher using something that he or she has made**. This also includes times when students are using improvised materials under guidance from the teacher. When this is happening the teacher may simply be observing the learners working.
C8. **Teacher using charts, supplementary readers**	**Usually printed; commercially made, not made by the teacher**. Again the teacher might be using the materials herself or might be observing the students use them from the front of the class
C9. **Teacher marking books**	Marking books with student, often asked pupil to come to front. Talks to pupil about work.

Annex B – Validity and reliability

Validity

1. **Content validity**. To demonstrate this form of validity an instrument must show that it fair and comprehensively covers the domain or the items that it purports to cover. This is particularly difficult in the case of classroom observation. Partly this is because of the multitude of events in a classroom. Teachers can engage in over 1000 interpersonal transactions in the course of a single day (see PW Jackson (1968) *Life in Classrooms*). The possible range of categories of behaviour is correspondingly very high. Partly this is because observers in any life situation often have differing perceptions of the same event.

2. The researcher must ensure that the elements of the issues to be covered are both a fair representation of the wider issues under investigation and that the elements chosen for the research sample are themselves addressed in sufficient breadth and depth. Considerable care was therefore taken to design an instrument with content validity:

   - The instrument built upon original work (see Flanders, N (1970) *Analyzing Teaching Behaviour*) and has got a proven history. Essentially it focused on the basic forms of classroom interaction; classroom organisation and management; talk and activity.
   - Classroom observation was carried out prior to the design of the instrument to ensure that key forms of teacher behaviour were included for measurement. The considerable experience of ESSPIN education quality specialists of Nigerian classrooms was used to check the representativeness of the categories to be captured by the instrument.
   - Instrument design was also guided by recent research, particularly the cross cultural studies of Robin Alexander (see R Alexander (2001) *Culture and Pedagogy*) from which he extracted approaches to classroom observation that were not culturally bound.
   - The instrument was designed to achieve maximum clarity for interpretation and use by ensuring that the observation categories were unambiguous and mutually exclusive.

3. **Construct validity**. This concept addresses whether my understanding of this construct is similar to that which is generally accepted to be the construct. To establish construct validity we need to be assured that our construction of a particular issue agreed with other constructions of the same underlying issue, for example intelligence, creativity or – in this case – classroom behaviour.

4. Construct validity was established in part by reference to relevant literature (see above) but also by discussion with teacher trainers selected to train field observers. In discussion with teacher trainers from each of the five states, the observation categories were progressively refined until there was a consensus that, in their totality, they represented a fair description of what a Nigerian classroom 'should look like' (it was consciously recognised by both the ESSPIN team and external teacher trainers that a number of the categories selected would not be encountered very frequently in the baseline observations). Nevertheless it was considered that such categories (such as those representing classroom

dialogue or learners writing in their own words) were fundamental to good practice and practice to which Nigerian teachers should aspire.

5. **Triangulation**. It was not part of the brief to investigate the same issues by using a different methodology such as interviews or questionnaires and it was therefore not possible to check validity by reference to data on classroom behaviour obtained by different methods. For example, if we had wished to check whether our findings on the prevalence of group work were accurate we could have asked learners how often they had experienced such methods over the past two weeks.

6. However, triangulation was built into the instrument design and implementation method by using two observers in each classroom. Each was working on their own, observing the same lesson and bringing their different perspectives to the same classroom events. Under these conditions if data divergence was minimal, we may expect the data to have a high degree of both validity (because possible different interpretations were reconciled) and reliability. In fact the data did have a substantial degree of internal consistency:

- There was only about 1% divergence in the views of one set of observers (observing teacher behaviour) from the other set (observing learners) on classroom organisation.
- The patterns observed throughout the lesson were remarkably consistent between the two sets of observers. For example, when there was a very high degree of correlation between teachers talking and children listening silently

7. There were minor inconsistencies, particularly in the interpretation of when group work or group discussion was being attempted but these inconsistencies affected a very small part of the data and did not affect the overall results.

8. **Ensuring validity**. Threats to validity were minimised by:

- choosing an appropriate sample
- ensuring that observers were qualified for the task and given sufficient time to complete their tasks: while this may have introduced the possibility of researcher bias (for example, looking for evidence to back one's theories) it proved invaluable to have field workers who understood the instrument and what we were trying to achieve
- reducing the observer effect as much as possible by training field workers to be as unobtrusive as possible in the classroom and to adopt professional but friendly behaviour to both teachers and head teachers
- taking steps to reduce the non-return of completed observation sheets

Reliability

9. Reliability means consistency and replicability over time, over instruments and over groups of respondents. It is concerned with precision and accuracy. For research to be reliable, it must demonstrate that if it were to be carried out again in a similar context, similar results

would be found. The second survey will conclusively demonstrate whether our methods are reliable but already there is evidence that our results are reliable:

- Each of the five states managed its own survey. As we have seen, the consistency of results across the states was considerable. Even the small variations from the norm in the case of Lagos were entirely credible and explicable, further strengthening the case for the validity and reliability of both the instrument and the methods used.
- Similarity of data between the three different levels of the school system investigated also suggests that the data is reliable. Small differences (for example, the decline of chanting as one goes up the school system) are entirely what one would expect.

10. Inter-observer reliability was achieved through training. Videos proved invaluable for focusing prospective observers on real classroom situations and for progressively achieving consensus on how to interpret events in the classroom. Definitions of each category of behaviour were progressively modified and refined in discussion with prospective trainers until the vast majority were satisfied that they understood the definition and that it was unambiguous. Both at the training of trainers stage and during field worker training, participants practiced observation in real schools after they had been exposed to discussion and video in training sessions. They later reflected on the school visits and problem areas for inter-observer reliability were defined and discussed.

Annex C – Basic characteristics of classrooms observed

State	PRY2 Maths	PRY2 English	PRY5 Maths	PRY5 English
Teachers with textbook (%)				
Jigawa	46	54	60	59
Kaduna	64	64	51	68
Kano	62	69	81	56
Kwara	89	96	91	70
Lagos	72	78	69	81
Total	64	69	67	64
Teachers with guide (%)				
Jigawa	15	12	26	11
Kaduna	4	6	11	3
Kano	6	18	19	9
Kwara	11	4	0	0
Lagos	7	4	4	0
Total	7	10	14	6
Teachers with poster/chart (%)				
Jigawa	2	7	8	2
Kaduna	3	2	4	3
Kano	10	16	9	7
Kwara	30	13	18	30
Lagos	38	15	15	3
Total	11	11	9	7
Children work on the wall (%)				
Jigawa	0	2	4	2
Kaduna	2	2	0	5
Kano	10	8	6	11
Kwara	26	29	45	33
Lagos	17	19	15	19
Total	8	8	9	11
Most/all children without textbooks (%)				
Jigawa	100	76	75	74
Kaduna	78	89	86	83
Kano	94	80	75	80
Kwara	32	33	32	35
Lagos	45	38	40	23
Total	76	72	71	68
Most/all children without exercise book (%)				
Jigawa	65	61	26	35
Kaduna	25	24	21	17
Kano	21	34	7	5
Kwara	4	0	6	0
Lagos	24	19	8	16
Total	23	27	14	12