

# Classroom Practices

## Research Report

Large-scale  
Quantitative Study

### Classroom Practices of Primary and Secondary Teachers Participating in English in Action: Second Cohort (2013)



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# Classroom Practices of Primary and Secondary Teachers Participating in English in Action: Second Cohort (2013)

## Executive summary

### *a) Background*

The purpose of this study was to ascertain whether there had been changes in the classroom practice of teachers and students participating in English in Action (EIA) over the period of the 2012–13 intervention (Cohort 2). Previous research in language teaching has established that when teachers take up most of the lesson time talking, this can severely limit students' opportunities to develop proficiency in the target language (Cook 2008), while a general goal of English language (EL) teachers is to motivate their students to speak and to practise using the target language (Nunan 1991). This study therefore focused upon the extent of teacher and student talk, the use of the target language by both, and the forms of classroom organisation (individual, pair, group or choral work) in which student talk is situated. Of course, the amount of teacher talk is not the only indicator of quality language teaching; the nature of that talk is also important – for example, whether teachers engage the attention of the class, present them with new information in an understandable way and allow them time to ask questions and comment.

Classroom Practice 2013 is a repeat of the studies on the pilot EIA programme (Cohort 1) (EIA 2011a & 2012a).

The students and teachers of Cohort 2 are sixfold greater in number (4,368 teachers, compared to 751 teachers, in schools). To enable this increase in scale, the programme has been delivered through a more decentralised model, with much less direct contact with English language teaching (ELT) experts, a greater embedding of expertise within teacher development materials (especially video), and a greater dependence upon localised peer support.

This study addresses two main questions:

1. To what extent do the teachers of Cohort 2 show improved classroom practice, particularly in relation to the amount and language of student talk, compared with the pre-intervention baseline?
2. To what extent has the programme been successful in repeating the post-intervention improvements in teachers' classroom practice seen in Cohort 1, at the much larger scale of Cohort 2?

### *b) Research methodology*

The EIA classroom practice baseline (EIA 2009a & b) was originally adapted from a general classroom observation study, and was geographically limited, due to an uncertain social and political context at the time of the fieldwork. Subsequently the methodology was revised to give more fine-grained data about student and teacher talk, use of the target language, and forms of classroom organisation, and was implemented on a representative sample of EIA teachers, four months after the launch of the pilot programme (EIA 2011a) and again 12–16 months after the programme start (EIA 2012a).

The research instrument is a timed observation schedule (see Appendix 1), directly comparable to that used in the earlier studies on the EIA pilot intervention (2010 and 2011).

The sample comprised 401 lesson observations – 230 of primary teachers, 145 of secondary teachers, and 26 of primary head teachers.

For this study, the practices observed were compared directly (statistically) with the earlier pilot studies (EIA 2011a and 2012a), and indirectly with the earlier baseline (EIA 2009a & b).

## **c) Key findings: Primary classrooms**

### **i) Teachers' talk and activity**

In the observation of Cohort 2 lessons, average primary teacher talk had dropped to less than half of the lesson time (45%). This represents a very significant reduction in teacher talk from 2009 baseline practices, where teacher talk was the predominant classroom activity. Although this is a higher figure than was found in the 2010 early-intervention observations (34%), it had not caused any reciprocal drop in student talk-time (compared to that found in 2010). Teachers' use of the target language was very much greater than that observed in the 2009 baseline, and slightly higher (76%) than that found in 2010 (71%) or 2011 (72%).

In the observation of Cohort 2 lessons, there was a notable increase in time teachers spent organising and a decrease in time spent presenting when compared with the baseline and with the 2011 study. Primary teachers were using a wide range of activities in the classroom and involving students in these activities. Primary teachers were found to be organising for 32% of the time, presenting 25% of the time, asking questions 23% of the time, and giving feedback 20% of the time. This is a change from the baseline studies (EIA 2009a & b), where teachers were observed to be primarily reading from the textbook and rarely involving students in activities. Compared to 2011, primary teachers spent less talk-time 'asking questions' (falling from 27% to 23%) and more time 'organising' classroom activity (rising to 32% from 22%), and much less time presenting (falling from 40% in 2011, to 25% in 2013).

These observations suggest EIA Cohort 2 primary teachers were making great and sustained efforts to increase the use of the target language, and involve students more actively in their English lessons.

### **ii) Students' talk and activity**

In the observation of Cohort 2 lessons, average student talk-time accounted for 27% of the lesson. This figure represents a very different situation to the 2009 baseline, where in two-thirds of lessons observed 'none or hardly any' of the students spoke. The figure is identical to that found in the 2010 observations. Students' use of the target language had also increased substantially over the baseline, to 91% of student talk in English. The proportion of primary students' talk in English was higher than that observed in 2010 (88%) and 2011 (81%), with the difference between 2011 being statistically significant ( $p < 0.05$ ).

Almost half (46%) of student talk was observed in the context of choral activities, while approximately a third (36%) was individual student talk. 18% of student talk was pair (10%) or group (8%) work, a figure midway between that observed in 2010 (30%) and 2011 (9%). In all forms of talk organisation, English was the main language used by students (86–91%). The fact that students were often engaged in activities in which they interacted with their classmates marks a notable change from the baseline studies (EIA 2009a & b), which identified few occasions when individual students or groups were encouraged to speak in English (2–4% of the lesson time) and which showed that in most classes students were not interactive at all.

## **d) Key findings: Secondary classrooms**

### **i) Teachers' talk and activity**

In the observation of Cohort 2 lessons, average secondary teacher talk had dropped to less than half of the lesson time (48%). This represents a very significant reduction in teacher talk from 2009 baseline practices, where teacher talk was the predominant classroom activity. Although this is a higher figure than was found in the 2010 early-intervention observations (33%), it is lower than 2011 (50%), and is not related to any reciprocal drop in student talk-time (compared to that found in 2010 or 2011). Teachers'

use of target language was much greater than that observed in the 2009 baseline, and slightly higher (87%) than that in 2010 (86%) or 2011 (79%).

In the observation of Cohort 2 lessons, there was a notable increase in the time teachers spent organising and a decrease in the time spent presenting when compared with the baseline and the 2011 study. Secondary teachers were using a wide range of activities in the classroom and involving students in these activities. They were found to be organising 29% of the time, presenting 32% of the time, asking questions 22% of the time, and giving feedback 17% of the time. This is a change from the baseline studies (EIA 2009a & b), where teachers were observed to be primarily reading from the textbook and rarely involving students in activities. Compared to 2011, secondary teachers spent similar talk-time 'asking questions' (22% compared to 23%), more time organising classroom activity (rising from 22% to 29%), and much less time presenting (falling from 45% to 32%).

These observations suggest EIA Cohort 2 secondary teachers were making great and sustained efforts to increase the use of the target language, and involve students more actively in their English lessons.

## **ii) Students' talk and activity**

In the observation of Cohort 2 lessons, average secondary student talk-time accounted for 24% of the lesson. This figure represents a very different situation to the 2009 baseline, where in two-thirds of lessons observed 'none or hardly any' of the students spoke. The figure is about the same as that found in the 2010 (23%) and 2011 (24%) observations. Students' use of the target language had also increased substantially over the baseline, rising to 87% of student talk in English. The proportion of secondary students' talk in English was similar to that observed in 2010 (88%) and 2011 (85%).

Over half (53%) of student talk observed was individual talk, while 28% was pair (13%) or group (15%) work, a figure similar to that observed in 2011 (27%), but below that observed in 2010 (57%). In all forms of talk organisation, English was the main language used by students in all forms of classroom organisation (85–92% for individual, pair and choral work); though as might be expected, in group work English still predominated (64%), but students used Bangla more (36%) than they did in other forms of organisation. The fact that students were often engaged in activities in which they interacted with their classmates marks a notable change from the baseline studies (EIA 2009a & b), which identified few occasions when individual students or groups were encouraged to speak in English (2–4% of the lesson time) and showed that in most classes students were not interactive at all.

## **e) Conclusions**

Despite a sixfold increase in scale for Cohort 2, and a more decentralised, peer-supported approach to teacher development, observations of Cohort 2 classroom practices show substantial and important changes compared with the baseline studies, which show teachers making great efforts to promote and model the target language, and to organise increased student participation in lessons. The observations show substantial increases in students' active participation, with more opportunities to speak and practise the target language.

These latest findings mark a notable increase in the time teachers spent organising and a decrease in the time spent presenting when compared with the baseline and with the 2011 study. The results show that both primary and secondary teachers were using a wide range of activities in the classroom and involving students in these activities.

In summary, the 2013 cohort of teachers observed in the EIA programme were using more English in their classes, involving students in more activities and encouraging them to spend more of their class time speaking in English.

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## Acronyms

AT	assistant teacher
CLT	communicative language teaching
EIA	English in Action
EL	English language
ELT	English language teaching
GESE	Graded Examinations in Spoken English
HT	head teacher
IER	Institute of Education and Research, University of Dhaka
CDI	composite deprivation index

## 1. Introduction

A key principle of communicative language teaching (CLT) is that the students should receive as much opportunity to use the target language as is possible. This is particularly important when students only have the chance to practise the language through formal education, as is generally the case with students learning English in Bangladesh. Previous research into language teaching has established that when teachers take up most of the lesson time talking, this can severely limit students' opportunities to develop proficiency in the target language (Cook 2008). A general goal of English language (EL) teachers is to motivate their students to speak – to use the language they are learning (Nunan 1991). Thus, an increase in student 'talk-time' during lessons is of key importance for the primary and secondary English in Action (EIA) interventions. Of course, the amount of teacher talk is not the only indicator of quality language teaching. The nature of that talk – for example, whether teachers engage the attention of the class, present them with new information in an understandable way and allow them time to ask questions and comment – is just as important.

### 1.1 Purpose of the study

The purpose of this study was to ascertain whether there had been changes in the classroom practice of teachers and students participating in EIA over the period of the 2012–13 intervention (Cohort 2). Previous studies of classroom practice were conducted first on a sample that represented teachers and students in Bangladesh prior to any intervention by EIA (EIA 2009a & b), and also with the cohort of students and teachers taking part in the EIA pilot intervention (Cohort 1: 2010–11). These latter studies were designed to investigate the classroom practice of EIA Pilot teachers. The 2010 'early intervention' observations took place four months after the launch of the pilot programme (June 2010), while the 2011 post-intervention observations were carried out on samples of the same student and teacher populations after they had taken part in the programme for 12–16 months (February (primary) and June 2011 (secondary)). Early and post-intervention observation findings were published in separate reports (EIA 2011a & 2012a).

Following the pilot intervention, in 2012 the EIA programme up-scaled its implementation with a cohort of 4,368 teachers and an estimated 887,000 students (Cohort 2: 2012–13). To gauge the extent of teachers' classroom practice improvements for this larger cohort, post-intervention observations of classrooms were carried out after a year of participation in the programme (September–October 2013). Whereas the previous two studies were early-intervention and post-intervention observations on the same cohort, this study used only a post-intervention observation, comparing this to the 'pre-intervention' baseline carried out in 2009 (EIA 2009a & b). In the other associated EIA studies on Cohort 2 (such as that on EL proficiency (EIA 2014a), this has been established by using the pre-intervention study on the pilot cohort (Cohort 1). This would have been the earlier study in 2010 (EIA 2011a). However, this study was carried out four months into the intervention, and hence is not a 'true' baseline. As noted above, a pre-intervention baseline classroom observation study was carried out (EIA 2009a & b). There are two reasons why this original baseline cannot be used to compare directly with observations post-intervention: firstly, the baseline was undertaken at a time of political and social uncertainty, which prevented a proper sampling of the population of teachers and students in Bangladesh; secondly, the methodology used a more general observation schedule, not one specific to EL teaching, which was why there was an attempt to provide another baseline in 2010 (EIA 2011a). Because the Cohort 1 baseline was not a true one (the study having taken place after the programme had started) we included an initial description of classrooms observed in the original baseline (2009) to provide a contrast to the ones observed during the EIA intervention (see Section 1.4, *Baseline practices*). How this comparison will be used is discussed next and in Section 2, *Methodology*.



## 1.2 Research questions

As well as presenting the new (2013) findings, this current report makes comparisons between these and those of the two earlier studies (2010 and 2011) and the pre-intervention study (2009). This study addresses two main questions:

1. To what extent do the teachers of Cohort 2 show improved classroom practice, particularly in relation to the amount of student talk and the language (English or Bangla) employed by teachers and students, compared with the pre-intervention baseline?
2. To what extent has the programme been successful in repeating the post-intervention improvements in teachers' classroom practice seen in Cohort 1, at the much larger scale of Cohort 2?

While the students and teachers in Cohort 2 had undergone an essentially similar programme as those of 2011 (Cohort 1), they are much greater in number. To enable this increase in scale for Cohort 2, the programme was delivered through a more decentralised model, with much less direct contact with national or international ELT experts, a greater embedding of expertise within teacher development materials (especially video), and a greater dependence upon localised peer support (i.e. locally-recruited teachers trained to facilitate cluster meetings).

The first research question seeks to establish if EIA can improve teachers' classroom practice over the 'baseline', with this increased scale and a reduced intensity of central support. This is an essential step in moving from the pilot phase (Phase II) to the fully institutionalised phase (Phase IV) in 2014–17. However, as will be indicated in the final section, there is no direct 'baseline' study with which to compare Cohort 2. Although general conditions of classrooms in the pre-intervention baseline situation (2009) can be compared with those found in 2013, no direct statistical comparisons can be made. Such comparisons can, however, be made with the 2010 study conducted just four months into the intervention (EIA 2011a), when it might be thought that the teachers had not changed their practices as much as after a full 12 months of the intervention (as observed in the 2011 study [EIA 2012a]). It turns out that, after four months of intervention, classrooms had indeed changed (e.g. students and teachers used more English), and therefore the 2010 study in effect is an early 'post-intervention' one. Nevertheless, this report uses this for statistical comparison, as was done in the previous report of the post-intervention after 12-16 months (EIA 2011a), while recognising that this is a demanding benchmark.

The second research question seeks to establish if the classroom practice of Cohort 2 teachers is comparable to that observed in the pilot intervention, as this gives a guide to the likely success of a full scaling up of EIA in the final phase of the programme. In particular, whether the developments in materials (for students, teachers and those who support them) and training of support staff, including the use of those staff in the Government system, can reproduce the same improvements. There is no reason to expect 2013 to reproduce the same degree of improvement in classroom practice as observed in 2011 (for the pilot cohort), and there may well be reasons to anticipate poorer practice, as a result of the larger-scale, decentralised and essentially peer-supported nature of the model. Indeed, recent research has shown that success in a pilot phase, where robust, randomized, control-trial evidence indicated an effective programme, does not guarantee success when this is transferred to a government-implemented (i.e. institutionalised) programme (Bold et al. 2013).

Table 1 shows the relationships between the three studies and the statistical comparisons that will be made in this report.

*Table 1: Pre- and post-intervention observations of Cohort 1 and 2 EIA students and teachers*

Pre-intervention baseline	Post-intervention		Comment
Sample to represent schools (and teachers) in Bangladesh	Cohort 1: June 2010	Cohort 1: February & June 2011	Post-intervention samples from same cohort & observation at 4 & 12-16 months of intervention
Sample to represent schools (and teachers) in Bangladesh	Cohort 1: June 2010 & February & June 2011	Cohort 2: Sept–Oct 2013	Observation after 12 months of intervention, using previous cohort post-intervention studies for statistical comparison

It is important to see this particular study as part of a set which includes two other studies where samples of teachers and students of Cohort 2 are investigated: in one case to determine both the EL proficiency of teachers and students and in the other their perceptions of learning English (EIA 2014a & b). In addition to these separate reports, there will be other elements:

- An overview study of the three reports will be undertaken to see whether there are apparent connections among the findings based on what is known from the implementation.
- Within the samples of the three studies are overlapping subjects that will enable data on teachers' perceptions, classroom behaviour and EL competence to be related to students' perceptions and EL competence.

These two elements will be the subject of a further report (EIA 2014c), but the sampling for the second element will be explained in Section 2, *Methodology*. The aim of these elements is to provide evidence on the relationships between the important variables that are likely to lead to improvements in student EL competence.

### **1.3 Nature of study**

As with the pilot programme (Cohort 1) studies, the follow-up investigation reported here (2013 study) was a large-scale quantitative observation of teaching and language practices among teachers and students participating in the EIA primary and secondary programmes. As noted earlier, a feature of improved ELT is an increase in the amount of student talk in lessons and an increase in the use of the target language by both teachers and students.

Thus, this study focused upon the following:

- i) the amount of student talk compared with teacher talk;
- ii) the use of English by students;
- iii) the use of English by teachers;
- iv) the nature of the teacher talk;
- v) the nature of the student activities.

## 1.4 Baseline practices

This study, together with the pilot (Cohort 1) early intervention (EIA 2011) and post-intervention studies (EIA 2012), was designed to follow on from the baseline studies (EIA 2009a & b). This baseline provided an indication of the types of activity that happened in English classes in Bangladesh prior to the EIA intervention<sup>1</sup>. Conducted in 2009, the study was based on a total of 252 classroom observations (162 of secondary classes and 90 of primary classes). Regarding interactivity and language use, this baseline study concluded the following (EIA 2009a & b):

- The pedagogic approach adopted in most lessons observed did not encourage a communicative approach to learning English. Teachers tended to read from the textbook, ask closed questions or move around the classroom monitoring and facilitating students as they worked individually. All other pedagogic activities were observed in less than 10% of classes.
- In two-thirds of the English lessons (67%), the teacher spoke in English less than in Bangla, while 27% of teachers spoke in English more than in Bangla. Only infrequently did teachers explain something in English (from 0–5% at any of the times sampled).
- Only a small proportion of students spoke in English during a lesson. In two-thirds of the classes observed (68%) ‘none or hardly any’ spoke in English, while in 23% of classes only ‘some’ (<50%) had an opportunity to do so. There were only a few occasions when individual students or groups were encouraged to speak in English (2–4% of classes at any of the times sampled).
- In two-thirds of classes, less than half of the students had opportunities to participate actively in discussion or to answer questions. In most classes students were not interactive at all. The students only participated by answering the questions asked by the teacher.

Although the results above are not statistically comparable to those of the subsequent studies, including this one, they provide an important backdrop to consider any improvements brought about by teachers in their classroom interactions on the basis of involvement with EIA.

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<sup>1</sup> Note the reservations about this indicated earlier.

## 2. Methodology

### 2.1 Study design

As indicated in the *Introduction*, Cohort 1 (the EIA pilot intervention) is essentially similar to Cohort 2, in terms of general key variables (gender, phase, location and divisions), although it was carried out in different upazilas. Thus, the Cohort 1 early intervention study (2010) is used here as a comparison for Cohort 2 (as indicated in Table 1). The Cohort 1 post-intervention (2011) study is also used for comparison. From the discussion of the 2009 baseline situation in the *Introduction* (Section 1.4), it is unlikely that in the subsequent year the classroom practice of teachers as they started the EIA intervention had not improved<sup>2</sup>, and there is evidence that the quality of English teaching in general has not improved; even after conventional interventions with teacher training in Bangladesh, there is no improvement in classroom results (Rahman et al, 2006)<sup>3</sup>. However, the 2010 study (EIA 2011a) was a more demanding baseline than that found in 2009, and this changes the comparison of baseline and post-intervention observations to one more like comparing two treatments that have different lengths of intervention.

The second research question implies a comparison of similar treatments, in that the results of 12-16 months of intervention for Cohort 1 (pilot) are compared with one year of intervention for Cohort 2 (an up-scaled and more decentralised and peer-supported implementation than the pilot approach). The hypothesis in this case is that EIA can attain the same levels of classroom practice (in terms of the list of behaviours i–v in Section 1.3) in Cohort 2 as it did with Cohort 1, but in more demanding conditions of implementation.

As noted in the *Introduction*, embedded in this study design is a sub-study that enables the variables of student and teacher perceptions and teacher classroom behaviour to be linked to student and teacher EL competence by use of a common set of samples. This design is not described here (see EIA 2014c), though the effect on sampling is described below.

### 2.2 Observation instrument

The instrument used was an observation schedule (see Appendix 1); a directly comparable version to that used in the previous classroom practice studies on Cohort 1 (2010 and 2011). It was designed to capture what teachers and students were doing at one-minute intervals during the lesson (instantaneous sampling, i.e. recording behaviour at that moment) and which language was being used. It was designed in reference to other instruments that measure classroom interaction and the features of CLT (e.g. Malamah-Thomas 1987, Spada 1990). At each minute of a lesson, the instrument enabled the following information to be recorded:

1. Whether the teacher or student(s) was/were speaking (in one of the columns under either 'Teacher is speaking' or 'Students are speaking').
2. Whether the students were carrying out an activity (in one of the columns under 'Students are').
3. Whether visual materials were being used (in the 'Visual materials' column).

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<sup>2</sup> Hamid (2011: 197) indicates poor levels of English that have not improved despite several efforts to introduce communicative approaches into the classroom. The overall framework for ELT is not always supportive of effective classroom practice (Education Watch 2011; EIA 2009b; Hamid and Balfour 2008, Kraft et al. 2009, World Bank 2008).

<sup>3</sup> There is evidence that less than 50% of secondary teachers receive any kind of training (UNESCO 2012: 138), and what training is available to both primary and secondary teachers is weak and has had little effect in the past (Kraft et al. 2009: 8 & 14).

4. Whether another classroom activity was taking place which did not feature under 'Teacher is speaking, 'Students are speaking' or 'Students are' columns (i.e. in the 'Other activity' column).

The instrument did not require an expert understanding of CLT practices, but did require the researchers undertaking the observations to have training to recognise the various classroom activities (presenting, organising, asking questions, giving feedback). The discussion in the *Introduction* (especially Section 1.3) on the important communicative approaches was used by the instrument designers when the instrument was first designed (2010) to define the categories that are valid for communicative approaches to ELT. This instrument was validated by the EIA team's ELT experts and has been indirectly validated in a number of project Annual Reviews by ELT experts<sup>4</sup>.

In terms of the reliability of the instrument, there are two components: the nature of the items to be observed and the skill of the observers in using the schedule. On the former, all items rely on relatively low-level decisions being made: who is talking, in what language, if the teacher is talking, in what mode (presenting, organising, and so on), if students are talking, in what context (individual, pair, group, chorus) or whether students are doing one of three activities (reading, writing or listening to audio), along with two other items (visuals used or 'other'). The second element to ensure maximum reliability is to make certain that the observers are trained and have experience of using the schedule in classrooms. Section 2.4 outlines the training given to the observers who, although not ELT experts, are following a higher degree programme in education, and have a good base level of understanding of classrooms and schools.

## **2.3 Sample**

### **2.3.1 Sample design**

A total of 4,368 teachers and approximately 887,000 students participated in EIA's Cohort 2: 1,802 primary teachers (ATs) and 900 primary head teachers (HTs), and 1,666 secondary teachers (ATs); and approximately 195,000 primary students and 692,000 secondary students. This study was designed to reach approximately 10% of the total government teacher population (4,164 teachers) taking part in EIA Cohort 2.

A minimum sample size was determined through a power analysis, conducted to ensure the sample was sufficiently large to enable statistically valid comparisons between the 2010, 2011 and 2013 studies (see Appendix 2). The analysis established that a minimum sample size of 264 primary and 149 secondary classes (413 in total) should be observed.

On the basis of this, 416 teachers (266 primary; 150 secondary) from 208 schools (133 primary; 75 secondary – two teachers per school) were selected for the study across 14 upazilas. It was intended that one lesson of each of the 416 teachers would be observed.

A multi-layer stratified random sampling strategy underpinned the sample selection, with random sampling used at each stage where possible. The process began by selecting upazilas, then clusters within those upazilas, then schools within the clusters.

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<sup>4</sup> In the 2011 project Output to Purpose (Annual) Review, the review team specifically considered the observation schedule and commended the project's Research, Monitoring and Evaluation output saying the 'quality of the work undertaken is strong' (DFID 2011: 12).

Note that the same schools were selected for both this classroom practice study and the EIA perceptions study (EIA 2014b); and there was also sample crossover with the EIA English language proficiency study (EIA 2014a)<sup>5</sup>.

The actual sample achieved was 401 teachers (230 primary; 26 primary head teachers (HTs); 145 secondary) from 207 schools (130 primary; 77 secondary), very close to the original planned size. Overall, 47% of teachers were female; the gender split differed for primary and secondary (61% female for primary; 21% for secondary, which broadly reflects the gender proportions in the Government of Bangladesh school teacher generally)<sup>6 7</sup>.

A few issues hampered the data collection with the effect of slightly reducing the planned sample size and changing selection of teachers in some instances: a national strike by primary teachers; national hartals [political strikes] and blockades; difficulties due to geographical remoteness and associated transportation issues; and instances where selected teachers could not be observed because they had transferred to other schools or left their jobs. (In this final case, where possible, the researchers selected other teachers from the same school or from that area.)

### 2.3.2 Statistical comparisons of samples

Table 2 compares the sample sizes of the four different studies that have been conducted (including the original pre-intervention baseline in 2009).

Table 2: Comparison of sample sizes for all classroom observation studies

Study	Primary teachers	Secondary teachers	Total
2009 (pre-intervention)	90	162	252
2010 Cohort 1 (4 months of intervention)	350	141	491
2011 Cohort 1 (12-16 months of intervention)	195	129	324
2013 Cohort 2 (12 months of intervention)	256*	145	401

\* of which 26 were HTs.

### 2.4 Training and data collection

The data were collected by 13 researchers from the Institute of Education and Research (IER), University of Dhaka. Three separate sessions were held with the researchers: a five-day training workshop; a one-day pre-fieldwork briefing; and a three-day post-fieldwork data workshop. The five-day workshop introduced the researchers to the study, oriented them to what was required regarding the classroom observation, and gave them practice in using the schedule with videos of EIA classrooms and in actual classrooms. The three-day post-fieldwork data workshop involved a debriefing/reflection to discuss experiences and identify issues and to also input the data.

As noted earlier, the research was carried out in September and October 2013. The intention was for each researcher to visit 16 schools in one upazila<sup>8</sup> (10/11 primary and 5/6 secondary schools) and observe 32 teachers (two per school).

<sup>5</sup> A detailed description of the sampling approach taken can be found in Appendix 3.

<sup>6</sup> Official statistics for 2012 show 63% of primary teachers and 24.4% of secondary teachers were female (BANBEIS 2014a & b)

<sup>7</sup> A full description of the demographic composition of the Cohort 2 (2013) classroom practice sample, and the population (all 9 teachers in cohort 2) can be found in Appendix 3.

<sup>8</sup> Except in one instance where a researcher split their time between upazilas: Ruma and Bandarban.

The duration of the classes observed varied from 8 to 70 minutes, with an average for primary lessons of 29 minutes and for secondary of 33 minutes.

The researchers negotiated access to schools directly. Local education managers were informed about the research taking place in their geographical area and their consent was gained prior to the fieldwork taking place.

### **2.5 Ethical issues**

As part of the normal ethical procedures adhered to by EIA, prior permission was obtained from the head teacher, the teacher and the students. Each teacher was again asked for her/his verbal and written consent to be involved in the study at the time of the observation.

All information within the EIA project is held under strict confidentiality and all teachers and students observed are anonymous in this report.

### **2.6 Data entry, storage, management and analysis**

The data were entered by the researchers into an Excel database from paper instruments in the post-fieldwork data workshop. The 13 databases were then collated into one dataset. Random checks were carried out on the data to identify potential miscoding and other errors.

Before the analysis was carried out, the data were cleaned to prepare them for analysis (see Appendix 5 for details).

Count data analysis was conducted, which used the Poisson model to provide appropriate analyses for count data. Statistical comparisons were conducted through statistical methods, such as cross tabulation and statistical significance tests. Results are reported with degrees of freedom and sample size in parentheses, the  $p$  value and the significance. (All tests of significance, along with full data that support the figures used in this report, are given in Appendix 6.) In order to ensure rigour in the analysis, the data were analysed independently by a highly-qualified statistician.

### **2.7 Limitations**

As noted above, fieldwork plans were disrupted by an uncertain political context in September and October 2013 in the run up to the general election, with a series of nationwide hartals and blockades. Further to this, a strike was held by primary teachers which meant primary schools were closed in some areas. These events had the effect of changing almost daily which schools were available for field visits. Flexible and responsive field management and coordination largely overcame these challenges. While the actual sample achieved was a little smaller than planned, it was sufficient to enable comparability; and school and cluster selection remained both random and representative, with regard to the wider cohort under study.

Cohort 1 EIA intervention schools, teachers and students were selected in order to be representative of Government schools across Bangladesh, in terms of national divisions and rural and urban locations. But to further strengthen the programme's social inclusion perspective, selection for the Cohort 2 upazilas (within the division) additionally took account of the UNICEF composite deprivation index (CDI), to ensure that EIA specifically targeted areas of greater social deprivation. The sample design for this study sought to obtain a representative sample of Cohort 2 teachers, but the selection of the cohort was inevitably biased towards high CDI areas, compared with the previous cohort and studies. Therefore, it is likely that the sample reported in this study, intended to be representative of Cohort 2, is associated with a higher than average CDI than the previous cohort and hence samples.

While the use of CDI in the selection of Cohort 2 intervention upazilas might lead to an expectation that the sample of Cohort 2 has a higher than average CDI than previous studies, it has not yet been possible to quantify this difference. Similarly, while we suspect it is possible, perhaps probable, that there may be a negative correlation between the CDI and classroom practice, we have not yet established this quantitatively. Therefore, further investigation is required, in order to establish:

1. the relationship between CDI of upazilas and classroom practice;
2. the comparability of the sample in this study, and those of previous studies (EIA 2012), when CDI is taken into account.

This change in composition risks limiting the improvement in classroom practice demonstrated by EIA teachers in Cohort 2 when compared with Cohort 1 findings.

As with all cases of classroom observation, the presence of the observer is likely to have had an effect on both the teacher and the students being observed. Teachers who were being observed may have felt an obligation to 'perform' the types of activities that are a focus of the EIA interventions. Although there is no way of knowing the importance of this effect, it is a common factor for all studies, and it is assumed not to add a particular bias to this current study.

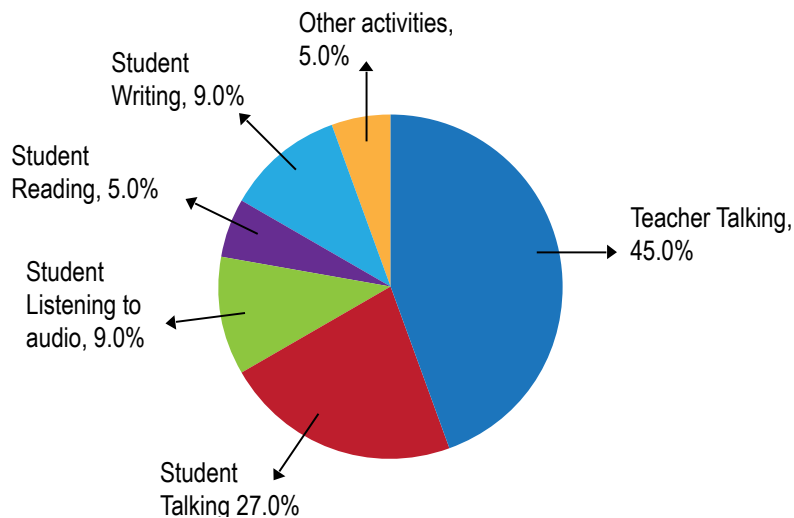


### 3. Findings<sup>9</sup>

#### 3.1 Primary classrooms

The results from the observations of primary lessons enable us to compare the teachers and students talk. The average percentage of teacher talk time was 45% (see Figure 1)<sup>10</sup>, while the average percentage of student talk time was 27%. Students were engaged in listening activities for 9% of the time, in reading activities for 5% of the time and in writing activities for 9% of the time. The important feature to note here, in terms of communicative language use, is that students were talking for more than a quarter of the lesson and active for more than 50% of the lesson time.

Figure 1: Talk and other activities in primary lessons (%)



Compared with the 2010 study on Cohort 1 (after four months of intervention), it is evident that the amount of teacher talk increased, but the amount of student talk is the same (see Table 3). There is also an almost corresponding reduction in the 'other' category to levels that are more acceptable in systematic observation, suggesting that what had been categorised as 'other' category is now 'teacher talk'; the 2011 study of Cohort 1 (12-16 months of intervention) noted that it was likely that the large amount of 'other' talk was probably the result of miscoding some kinds of teacher talk<sup>11</sup>. These complications make it difficult to assess the statistical significance of the findings.

<sup>9</sup> Tests of significance can be found in Appendix 6.

<sup>10</sup> Note all figures quoted in this report are rounded-off percentages.

<sup>11</sup> See the explanation in the Cohort 1 study (EIA 2012a: 24).

Table 3: Comparison of primary classroom talk and other activities; Cohort 1 (2010) and 2 (2013) (% of lesson time)

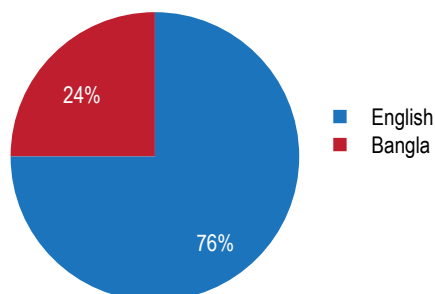
Talk and other activities in lesson	Cohort 1 (2010)	Cohort 2 (2013)
Teacher talking	34%	45%
Student talking	27%	27%
Students listening (to audio)	10%	9%
Students writing	4%	9%
Students reading	4%	5%
Other	21%	5%

### 3.1.1 Primary teachers

#### Teachers talking: English vs. Bangla

When teachers were talking, the data show that they were using significantly more English than Bangla in their classrooms. On average, they were using English 76% of the time and Bangla 24% of the time (see Figure 2).

Figure 2: Language used by primary teachers (%)



#### Types of primary teacher talk

When teachers were talking, they were organising 32% of the time, presenting 25% of the time, asking questions 23% of the time and giving feedback 20% of the time (see Figure 3). These figures are not statistically significantly different from 2010, except for 'Asking questions', which reduced from 28% to 23% ( $p < 0.01$ ).

Figure 3: Types of primary teacher talk (%)



For each type of teacher talk, the percentage of English and Bangla used was calculated. In each of the categories, English was used for the majority of the time (see Table 4).

Table 4: Types of primary teacher talk: English vs. Bangla (%)

Teacher activity	% English	% Bangla
Presenting	82%	18%
Asking questions	81%	19%
Organising	69%	31%
Giving feedback	76%	24%

The overall percentages of each activity (presenting, organising and so on) shown in Table 4 are explained below, along with illustrations of the nature of these activities.

### Organising

32% of the time when teachers were talking, they were organising. 69% of that time (i.e. of the 32%), the teacher was organising in English. 'Organising' means the teacher is telling the students what to do. Students are expected not only to listen, but also to do something according to the teacher's directions. Examples include:

*OK, students, now turn and face your partner.  
I want you to look at me and listen carefully.  
Repeat after me.  
Malik, can you take this letter to the school office?  
It's time to go to your next class.*

### Presenting

25% of the time, when teachers were talking (including reading aloud), they were presenting material. 82% of that time (i.e. of the 25%), the teacher was presenting in English. 'Presenting' means the teacher is giving information to the students. He or she may be describing, explaining or narrating, whether from the textbook or from his/her own knowledge, or from any other source. Students are expected to listen to the information. Examples include:

*This is a story about a young girl who was born in Holland.  
We use the present tense to talk about people's habits and routines.  
Drinking contaminated water can cause diseases.*

### Giving feedback

20% of the time when teachers were talking, they were giving feedback. 76% of that time (i.e. of the 20%), the teacher was giving feedback in English. Feedback can be either positive or negative and may serve not only to let learners know how well they have performed but also to increase motivation and build a supportive classroom climate. 'Giving feedback' means the teacher is responding to something students have said or done, and evaluating or commenting on it. Examples include:

*Yes, Farhana, that's correct.  
Not quite right. You need to use the past tense.  
Well done, students.  
Oh, your picture looks very nice. But where is the river?*

### Asking questions

23% of the time when teachers were talking, they were asking questions. 81% of that time (i.e. of the 23%), the teacher was asking questions in English. Questioning is the principal means by which teachers control classroom interaction. 'Asking questions' means the teacher is asking questions or eliciting

information. Students are expected to respond verbally (as opposed to organising, when they respond non-verbally). Examples include:

*What colour is the flag?*

*Do you know what a 'tiger' is?*

*Now I want you to think carefully and explain why we need vitamins in our diet.*

*Can you tell me which lesson we are doing today?*

### **Summary of changes in primary teacher practice**

Here a summary is given in terms of the way in which the 2013 study compares with the Cohort 1 studies (2010 and 2011) and the original baseline (in as much as that can be done) on a number of important dimensions that relate to the improvement in teacher practice to make their ELT more effective through the use of a communicative approach. In particular, this is done through considering the amount of English they use in the classroom and the types of talk employed.

### **Substantial increase in teachers' spoken English**

Whereas, in the baseline (2009), the majority of teacher talk was in Bangla, in Cohort 2 teachers used English to communicate with students for the majority of the lesson, and the proportion of English spoken by Cohort 2 teachers showed a slight increase in the use of this target language compared with Cohort 1, though this is not statistically significant (Table 5).

*Table 5: Comparison of primary teacher language (English Vs. Bangla): Cohorts 1 (2010, 2011) & 2 (2013) (% of time)*

<b>Language</b>	<b>Cohort 1 (2010)</b>	<b>Cohort 1 (2011)</b>	<b>Cohort 2 (2013)</b>
English	71%	72%	76%
Bangla	28%	28%	24%

It would be expected that teachers would use Bangla more for 'Organising' than other types of teacher talk, as is borne out in the data (see Table 4), because instructions tend to be more complex than the target language aimed for in the activity and can be much more easily explained in Bangla than by attempting to use English.

These findings mark a significant change from the classroom practices observed in the baseline studies (EIA 2009a & b), where only 27% of teachers spoke in English more than they did in Bangla, and where teachers tended to read from the textbook and speak in Bangla more than in English (in 67% of the lesson).

### **Substantial change in teachers' activities**

Table 6 shows that the proportions of the Cohort 2 teachers' talking activities were much the same as in 2010 (after four months of the pilot intervention), apart from 'Asking questions' where there is a statistically significant difference ( $p < 0.01$ ). There was an increase in the amount of time spent 'Organising' and decrease in time spent 'Presenting' compared to the 2011 study, though this helps to restore the situation to that found in the first study (2010).

*Table 6: Comparison of primary teacher activity: Cohorts 1 (2010, 2011) & 2 (2013) (% of teacher talk)*

<b>Teacher activity</b>	<b>Cohort 1 (2010)</b>	<b>Cohort 1 (2011)</b>	<b>Cohort 2 (2013)</b>
Presenting	23%	40%	25%
Asking questions	28%	27%	23%
Organising	27%	22%	32%
Giving feedback	19%	11%	20%

Teachers were engaging with students through giving feedback in both English and Bangla, and involving them in the lesson through questioning. The slightly higher percentage of time spent ‘Organising’ and ‘Giving feedback’ suggests more time was given to student talk and student-centred activity, as is promoted in the communicative approach and demonstrated in the videos used to support EIA teachers. Although the use of Bangla is not as high in these two types of teacher talk as in the other two, there was an increase in the use of English in all types, including these two ‘interactive’ types of talk, from Cohort 1 to Cohort 2 (see Table 7).

Table 7: Comparison of primary teacher talk (English Vs. Bangla): Cohorts 1 (2010, 2011) & 2 (2013) (% use of language)

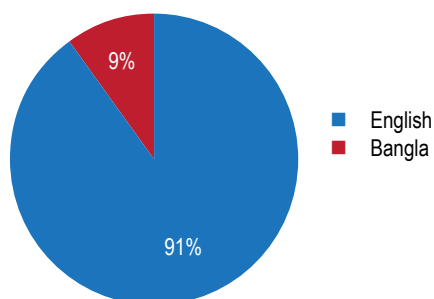
Teacher activity	Cohort 1 (2010) <sup>12</sup>		Cohort 1 (2011)		Cohort 2 (2013)	
	English	Bangla	English	Bangla	English	Bangla
Presenting	66%	24%	71%	29%	82%	18%
Asking questions	69%	22%	72%	28%	81%	19%
Organising	5%	33%	66%	34%	69%	31%
Giving feedback	68%	24%	83%	17%	76%	24%

### 3.1.2 Primary students

#### Students talking: English vs. Bangla

When primary students were talking, the data show that they were using much more English than Bangla in their classrooms: 91% of the time they were talking, it was in English (see Figure 4). This was very different to the 2009 baseline, and somewhat higher than the proportion found in the pilot studies (Cohort 1): 88% in 2010 (four months after intervention) and 81% in 2011 (12–16 months after intervention). Differences with 2011 are statistically significant ( $p < 0.05$ ).

Figure 4: Language used by primary students (%)

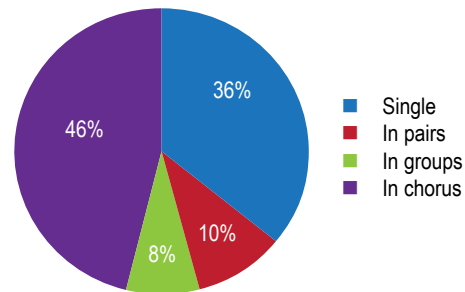


#### Types of classroom activities in which student talk occurred

When students were talking, 36% of the time they were talking individually (e.g. responding to a teacher’s question); 10% of the time they were taking part in activities in which they were speaking in pairs; 8% of the time they were speaking in groups; and 46% of the time they were speaking in chorus (see Figure 5).

<sup>12</sup> The 2010 figures do not add up to 100% (horizontally) because at times there was double coding when teachers spoke in both English and Bangla.

Figure 5: Types of primary student talk (%)



For each type of student activity, the percentage of English and Bangla used was calculated. In each of the categories, English was used for a large majority of the time (see Table 8).

Table 8: Primary student talk: English vs. Bangla (%)

Types of student talk	English	Bangla
Single	91%	10%
In pairs	94%	6%
In groups	86%	14%
In chorus	90%	10%

The percentages of each activity (speaking on own, in pairs, and so on) presented in Table 8 are explained below, combined with Figure 5 data.

#### A student speaking on his/her own

36% of the time when students were speaking, one student was speaking on his/her own. The large majority of the time when a student was speaking on his/her own, he/she was doing so in English (91%).

#### Students speaking in pairs

When students were speaking, 10% of that time they were speaking in pairs. According to the data, the large majority of time when students were speaking in pairs, they were doing so in English (94%).

#### Students speaking in groups

When students were speaking, 8% of that time they were speaking in groups. The large majority of time when they were speaking in groups, they were doing so in English (86%).

#### Students speaking in chorus

When students were speaking, 46% of that time they were speaking in chorus. The large majority of time when they were speaking in chorus, they were doing so in English (90%).

#### Student activity other than speaking

Figure 1 indicated the relative proportions of the lesson undertaken by students when they or the teacher were not talking. On average, students were writing for 9% of the lesson, reading for 5% and listening to audio for 9%. Of all of these 'no talking activities', it is evident that, compared with the situation in 2010 after four months of EIA pilot intervention, the amount of writing increased, as the corresponding proportions were: writing: 4%; reading: 4%; listening: 10%. This contributes to an increase in the amount of time on the other three skills to almost a quarter of the lesson, mainly attributable to an increase in reading<sup>13</sup>.

<sup>13</sup> In the 2013 project Annual Review, a comment was made on the need to balance speaking and listening skills with those of reading and writing (DFID 2013: 5).

## **Summary of primary student performance**

As with primary teachers, this summary is given in terms of the way in which the 2013 study compares with the Cohort 1 studies (2010 and 2011) and the original baseline (in as much as can be done) on several important dimensions that relate to the improvement in the classroom to make EL learning more effective through the use of a communicative approach. In particular, this is done through considering the amount of English students used in the classroom, the types of talk employed and their participation in communicative activity.

### **Increase in student talk**

Students were speaking for 27% of the lesson time, while teachers were talking for 45% of the time. Classic studies of US classrooms typically show student talk taking up around a quarter of the lesson (Flanders 1970)<sup>14</sup>. Therefore, student talk time in EIA classrooms is comparable to international standards. This also compares favourably with research into language classrooms, which established that teachers tend to do most of the classroom talk, with teacher talk around 70% of the total talk (Cook 2008, Chaudron 1988, Musumeci 1996). This proportion of student talk is identical to that in the 2010 Cohort 1 study (after four months of intervention); it is not possible to compare it with that in 2011, as a double-coding error for teacher and student talk prevented it from being computed.

### **Substantial increase in student use of English**

Students were using the target language (i.e. English) for 91% of the time they are speaking during a lesson. This marks a notable change from the results of the baseline studies, where students were found to be talking almost exclusively in Bangla. These figures are also higher than those found in the Cohort 1 studies, where students were using English 88% and 81% of the time they were talking (for 2010 and 2011 respectively).

### **Student participation in communicative activity**

The fact that students were often engaged in activities in which they interact with their classmates marks a notable change from the baseline studies (2009a & b), which identified few occasions when individual students or groups were encouraged to speak in English (2–4% of the lesson time) and which showed that in most classes students were not interactive at all.

Just over a third of activities recorded required a response from an individual student, and there was a notable amount of pair and group work (18% in total), with more pair and group work recorded than in the Cohort 1 study in 2011 ( $p < 0.05$ ), where the total was over 9%, a recovery to the levels found in the 2010 study (see Table 9). Similarly, choring reduced to nearer the 2010 level, an approach that is seen as appropriate in language learning for young learners, particularly when teaching large classes. When the Cohort 2 study's talk types were compared statistically with either of the Cohort 1 studies, a significant difference was found, except in the case of 'single' talk for Cohort 1, 2011 compared with Cohort 2, and 'talk in pairs' for Cohort 1, 2010 compared with Cohort 2.

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<sup>14</sup> Flanders also had the 'two-thirds rule': two-thirds of the lesson is talk, two-thirds of the talk is by the teacher and two-thirds of teacher talk is presenting, giving instructions or exposition. The typical EIA classroom corresponds to this rule.

Table 9: Comparison of types of primary student talk: Cohorts 1 (2010, 2011) & 2 (2013) (% of student talk)

Types of student talk	Cohort 1 (2010)	Cohort 1 (2011)	Cohort 2 (2013)
Single	30%	38%	36%
In pairs	14%	5%	10%
In groups	16%	4%	8%
In chorus	40%	53%	46%

### 3.1.3 Summary of changes in primary student and teacher practices

It is possible to consider the talk and activities of primary students and teachers in terms of typical lesson time found in these classrooms. The average class duration of the primary lessons observed was 37 minutes. Using this length of lesson as an average, the lesson might look like this:

*In a lesson of 37 minutes, the teacher was speaking for 17 minutes and the students were speaking for 10 minutes. For 3 minutes of the lesson, the students were listening to audio materials, for 2 minutes they were reading and for 3 minutes they were writing. Of the 10 minutes when students were speaking, they were talking in English for 9 of those minutes. In total, students were active for 18 minutes i.e. 50% of the lesson.*

*Of the 17 minutes when teachers were talking, they were speaking in English for about 13 minutes. Of those 17 minutes, teachers were presenting for 4 minutes, organising for more than 5 minutes, giving feedback for 3 minutes and asking questions for 4 minutes. These activities were happening in English the majority of the time. Other activities were going on for 2 minutes.*

### 3.2 Secondary classrooms

The results from the observations of secondary lessons enable us to compare teachers and students talk. The average percentage of teacher talk time was 48% (see Figure 6), while the average percentage of student talk time was 24%. Students were engaged in listening activities for 4% of the time, in reading activities for 6% of the time and in writing activities for 12% of the time. For 6% of the time, other activities were taking place in the classroom. The important feature to note here in terms of communicative language use is that students were talking for about a quarter of the lesson and active for more than 50% of class time.

Figure 6: Talk and other activities in secondary lessons (%)

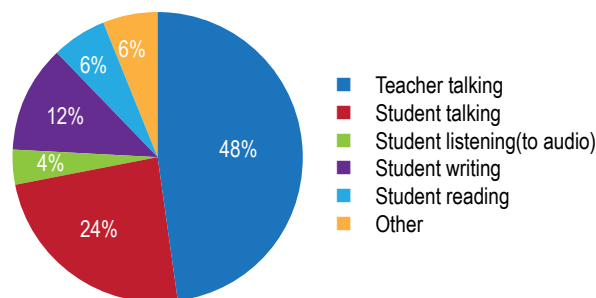


Table 10 shows that the results of all the studies are comparable in terms of talk and activities, assuming that the coding of 'Other' in 2010 (as in the primary classroom) included some form of teacher talk<sup>15</sup>. The similar results obtained in the studies indicate that teachers were able to maintain a communicative approach to their classes despite having less direct contact with ELT experts, as the numbers of teachers involved increased from 751 in the pilot to 4,368 in 2013 (Cohort 2).

<sup>15</sup> See the explanation in the Cohort 1 study (EIA 2012a: 24).



Table 10: Comparison of secondary classroom talk and other activities: Cohorts 1 (2010, 2011) & 2 (2013) (% of lesson)

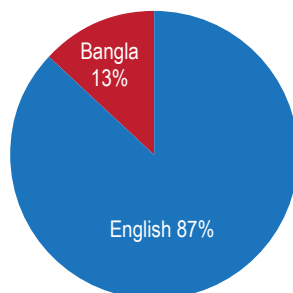
Talk and other activities in lesson	Cohort 1 (2010)	Cohort 1 (2011)	Cohort 2 (2013)
Teacher talking	33%	50%	48%
Student talking	23%	24%	24%
Students listening (to audio)	4%	3%	4%
Students writing	8%	9%	12%
Students reading	4%	4%	6%
Other	28%	10%	6%

### 3.2.1 Secondary teachers

#### Teachers talking: English vs. Bangla

When teachers were talking, the data show they were using more English than Bangla in their classrooms: they were using English 87% of the time, compared with Bangla 13% of the time (see Figure 7).

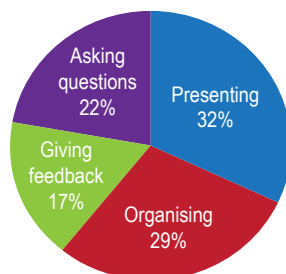
Figure 7: Language used by secondary teachers (%)



#### Types of teacher talk

When teachers were talking, they were presenting 32% of the time, organising 29% of the time, giving feedback 17% of the time and asking questions 22% of the time (see Figure 8).

Figure 8: Types of secondary teacher talk (%)



For each type of teacher talk, the percentage of English and Bangla used was calculated. In each of the categories, English was used the vast majority of the time (see Table 11).

Table 11: Types of secondary teacher talk: English vs. Bangla (%)

Teacher activity	English	Bangla
Presenting	84%	16%
Organising	85%	15%
Giving feedback	91%	9%
Asking questions	88%	12%

The percentages of each activity (presenting, organising, and so on) presented in Table 11 are explained below (using data from Figure 7).

### Presenting

32% of the time when teachers were talking, they were presenting material. 84% of that time (i.e. of the 32%), the teacher was presenting in English.

### Organising

29% of the time when teachers were talking, they were organising. 85% of that time (i.e. of the 29%), the teacher was organising in English.

### Giving feedback

17% of the time when teachers were talking, they were giving feedback. 91% of that time (i.e. of the 17%), the teacher was giving feedback in English.

### Asking questions

22% of the time when teachers were talking, they were asking questions. 88% of that time (i.e. of the 22%), the teacher was asking questions in English.

### Summary of changes in secondary teacher practice

As with the primary teachers and students, the summary here is given in terms of the way in which the 2013 study compares with the Cohort 1 studies (2010 and 2011) and the original baseline (in as much as can be done) on a number of important dimensions that relate to the improvement in teacher practice to make their ELT more effective through the use of a communicative approach. In particular, this is done by considering the amount of English teachers use in the classroom and the types of talk employed.

### Substantial increase in secondary teachers' spoken English

Teachers were using the target language (i.e. English) to communicate with students for the majority of the lesson. This contrasts with the baseline studies (EIA 2009a & b), where most teachers spoke Bangla. Table 12 shows that the amount of English used was higher than Cohort 1 after 12-16 months (2011), where teachers were found to be using English 79% of the time and Bangla 21% of the time, but it was the same as Cohort 1 after four months (2010). These findings show that the trend of teachers using the target language of English to communicate with students in their classrooms has been sustained as the EIA programme has scaled up from working with hundreds to thousands of teachers.

Table 12: Comparison of secondary teacher language (English vs. Bangla): Cohorts 1 (2010, 2011) and 2 (2013) (% of talk time)

Language used by teachers	Cohort 1 (2010)	Cohort 1 (2011)	Cohort 2 (2013)
English	86%	79%	87%
Bangla	14%	21%	13%

### Change in teachers' activities

When comparing data gathered in the 2013 study (Cohort 2) with that of the 2011 study (Cohort 1), it can be seen that teachers' presentation time fell to approximately a third of the lesson and, as with primary teachers, returned to the level of the 2010 study of Cohort 1 (Table 13). The time spent 'organising' increased slightly above the levels in both of the Cohort 1 studies. While moving away from traditional practice requires support, there is growing evidence of communicative activity in the classroom, as teachers were spending more time organising the lesson and were engaging with students through feedback and involving them in the lesson through questioning.

As with the primary lessons, the profile of teacher activity changed slightly, with time more evenly distributed across the four activities. The difference between the organising in 2010 and 2013 and presenting between 2011 and 2013 is significant ( $p < 0.05$ ). This reflects a very different picture to that of the teacher-focused baseline studies (2009a & b), where teachers tended to spend most of their time presenting from the textbook.

Table 13: Comparison of secondary teacher activity: Cohorts 1 (2010, 2011) & 2 (2013) (% of teacher talk)

Teacher activity	Cohort 1 (2010)	Cohort 1 (2011)	Cohort 2 (2013)
Presenting	30%	45%	32%
Asking questions	26%	23%	22%
Organising	20%	22%	29%
Giving feedback	24%	10%	17%

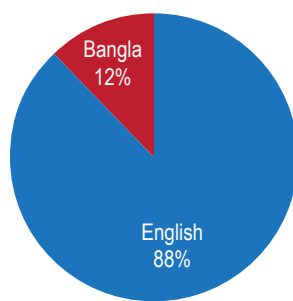
### 3.2.2 Secondary students

A communicative classroom shows evidence of all four skills (speaking, listening, writing and reading) being used in an integrated manner. In the classes observed, students were speaking for 24% of the lesson time (see Figure 6). Students were engaged in listening activities with the audio for 4% of the time, reading activities for 6% of the time and writing activities for 12% of the time. Students were therefore active for over 50% of the lesson. We can assume that most of this listening activity took place in English as EIA audio materials are in English. Furthermore, as the students' reading and writing tasks focus around the textbook, which is in English, one can also assume that the majority of this activity took place in English.

#### Students talking: English vs. Bangla

When secondary students were talking during the lesson, they were using English for 88% of the time and Bangla for 12% of the time (see Figure 9). This proportion is similar to that observed in 2010 (88%) and 2011 (85%).

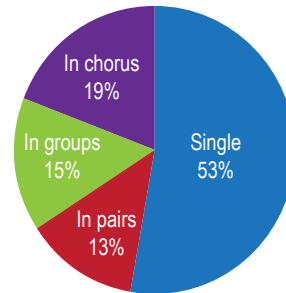
Figure 9: Language used by secondary students (%)



#### Types of classroom activities in which student talk occurred

When secondary students were talking, 53% of that time they were speaking individually; 13% of the time they were taking part in activities in which they were speaking in pairs; 15% of the time they were speaking in groups; and 19% of the time they were speaking in chorus (see Figure 10).

Figure 10: Types of secondary student talk (%)



For each type of student talk, the percentage of English and Bangla used was calculated. In each category, English was used the vast majority of the time, apart from in groups, where it was used two-thirds of the time (see Table 14).

Table 14: Secondary student talk: English vs. Bangla (%)

Types of student talk	English	Bangla
Single	92%	8%
In pairs	85%	15%
In groups	64%	36%
In chorus	92%	8%

The percentages of each activity presented in Table 14 are explained below.

#### **A student speaking on his/her own**

53% of the time when students were speaking, one student was speaking on his/her own. The majority of time when a student was speaking on his/her own, he/she was doing so in English (92%).

#### **Students speaking in pairs**

When students were speaking, 13% of that time they were speaking in pairs. The majority of time when students were speaking in pairs, they were doing so in English (85%).

#### **Students speaking in groups**

When students were speaking, 15% of that time they were speaking in groups. The majority of time when they were speaking in groups, they were doing so in English (64%).

#### **Students speaking in chorus**

When students were speaking, 19% of that time they were speaking in chorus. The majority of time when they were speaking in chorus, they were doing so in English (92%).

#### **Summary of changes in secondary student talk**

As with primary students, the summary here is given in terms of the way in which the 2013 study (Cohort 2) compares with the Cohort 1 studies (2010 and 2011) and the original baseline (in as much as that can be done) on a number of important dimensions that relate to the improvement in the classroom to make EL learning more effective through the use of a communicative approach. In particular, this is done through considering the amount of English used in the classroom, the types of talk employed and the participation in communicative activity.

### **Increase in student talk**

Students were speaking for 24% of the lesson time, with teachers talking for 48% of the time. As indicated for primary students, secondary student talk time in EIA classrooms is comparable to international standards, and compares favourably with research into language classrooms. The proportions of student talk across the three studies is similar (23 or 24%), thus indicating that Cohort 2 has the same level of secondary student talk as in Cohort 1, despite the more demanding implementation conditions.

### **Increase in students' spoken English**

Students were using the target language (i.e. English) for 88% of the time that they are speaking during a lesson. Again, this figure was similar to that in Cohort 1 (88% in 2010 and 85% in 2011 studies). This marks an important change in the classroom practices observed in the baseline studies (2009a & b), where only a small proportion of students spoke in English during a lesson, while most students were found to be talking almost exclusively in Bangla.

### **Student participation in communicative activities**

While there was a reasonably high incidence of activities recorded that require a response from individual students, there was also a large amount of pair and group work going on (28% in total). Students were also regularly engaged in chorusing activities, which could be attributed to the appropriateness of this technique for teaching large classes. This compares very favourably with the results from the baseline studies (2009a & b), where there were only a few occasions viewed when individual students or groups were encouraged to speak in English (2–4% of classes at any of the times sampled). The similarity of figures for talking in pairs and groups in both the Cohort 2 (2013) and Cohort 1 (2011) studies (Table 15) could be viewed as evidence that the EIA approach works as well with thousands of teachers as it does with hundreds (there is no significant difference between the two sets of figures for types of student talk)<sup>16</sup>.

*Table 15: Comparison of types of secondary student talk: Cohorts 1 (2010, 2011) & 2 (2013) (% of student talk)*

<b>Types of student talk</b>	<b>Cohort 1 (2010)</b>	<b>Cohort 1 (2011)</b>	<b>Cohort 2 (2013)</b>
Single	39%	50%	53%
In pairs	31%	15%	13%
In groups	26%	12%	15%
In chorus	3%	22%	19%

The fact that students are often engaged in activities in which they interact with their classmates marks a notable change from the baseline studies (2009a & b), which identified few occasions when individual students or groups were encouraged to speak in English (2–4% of the lesson time) and which showed that in most classes students were not interactive at all.

### **3.2.3 Summary of changes in secondary student and teacher practices**

It is possible to consider the talk and activities of secondary students and teachers in terms of typical lesson time found in these classrooms. The average duration of the secondary lessons observed was 34 minutes. Using this length of lesson as an average, a lesson might look like this:

*In a lesson of 34 minutes, the teacher was speaking for 16 minutes and the students were speaking for 8 minutes. For 1½ minutes of the lesson the students were listening to audio materials, for 2 minutes they were reading and for 4 minutes they were writing. Of the 8 minutes when students were speaking, they were talking in English for 7 of those minutes. In total, students were active for almost 16 minutes i.e. 46% of the lesson.*

*Of the 16 minutes when teachers were talking, they were speaking in English for about 14 of those minutes. Of those 16 minutes, teachers were presenting for 5 minutes, organising for 4½ minutes, giving feedback for 3 minutes and asking questions for 3½ minutes. These activities were happening in English the majority of the time.*

<sup>16</sup> The comparison of Cohort 2 student talk with that from the 2010 study of Cohort 1 is highly significantly different, and indicates some kind of anomaly (in the 2011 study report it was thought this might be a feature of the time of the year of the observations; EIA 2012a).

## 4. Conclusions

### 4.1 Research questions

The purpose of this study was to determine the extent of any changes observed in the classroom practice of teachers participating in EIA in the second cohort, with reference to that observed in the baseline studies (2009a & b) of a sample of schools prior to the intervention, and to that in the pilot cohort (Cohort 1). The pilot phase involved working with 751 teachers and this 2013 study was designed to see whether changes witnessed in the pilot were repeated in Cohort 2 working with 4,368 teachers, after 12 months of intervention. The study provides insight into aspects of CLT and interactive pedagogy outlined below and presents evidence of sustained positive change in teacher practices and the use of English in the classes observed. In particular, the study sought to investigate two research questions:

1. To what extent do the teachers of Cohort 2 show improved classroom practice, particularly in relation to the amount and language of student talk, compared with the pre-intervention baseline?
2. To what extent has the programme been successful in repeating the post-intervention improvements in teachers' classroom practice seen in Cohort 1, at the much larger scale of Cohort 2?

Teacher and student talk and activities in both primary and secondary classrooms have been compared across four studies: pre-intervention (2009), Cohort 1 (after four months and 12-16 months of intervention; 2010 & 2011), Cohort 2 (after 12 months of intervention; 2013). The dimensions considered have been:

- i) the amount of student talk, compared with teacher talk;
- ii) the use of English by students;
- iii) the use of English by teachers;
- iv) the nature of the teacher talk;
- v) the nature of the student activities.

Each of these activities are examined in Table 16 in relation to the research questions (comparison against the 2009 pre-intervention baseline and Cohort 1 studies in 2010 and 2011).

Table 16: An overview of the results in terms of the study's research questions

Dimensions of talk & activity	Primary	Secondary
% student talk in lesson In pairs	RQ1: Cohort 2 better – 27% compared with small proportion of any lesson where students spoke	RQ1: Cohort 2 better – 24% compared with small proportion of any lesson where students spoke
	RQ2: Cohort 2 same as Cohort 1 (2010)	RQ2: Cohort 2 same as Cohort 1 (2010 & 2011)
% of student talk in English	RQ1: Cohort 2 better – 90% in English compared with students talking almost exclusively in Bangla	RQ1: Cohort 2 better – 88% in English compared with students talking almost exclusively in Bangla
	RQ2: Cohort 2 slightly higher than Cohort 1 (2010) and better than 2011	RQ1: Cohort 2 better – 88% in English compared with students talking almost exclusively in Bangla
% student activities	RQ1: Cohort 2 better with all activities mainly in English, and 18% pair and group work compared with few occasions when individuals/ groups used English.	RQ2: Cohort 2 same as Cohort 1 (2010 and 2011)
	RQ2: Cohort 2 has 18% of pair and group activities, between percentage obtained in Cohort 1 2010 (30%) and 2011 (9%).	RQ2: Cohort 2 has 28% of activities about same as Cohort 1 2011 (27%).
% teacher talk in lesson	RQ1: Cohort 2 better – 45% compared with lessons where teacher talk predominates.	RQ1: Cohort 2 better – 48% compared with lessons where teacher talk predominates
	RQ2: Cohort 2 higher than Cohort 1 (2010); no value in 2011 owing to coding problem	RQ2: Cohort 2 has similar value to Cohort 1 2011 (50%)
% of teacher talk in English	RQ1: Cohort 2 better – 76%, compared with most teachers speaking in Bangla	RQ1: Cohort 2 better – 87%, compared with most teachers speaking in Bangla
	RQ2: Cohort 2 very slightly better at 75% than Cohort 1 (2010 & 2011; 71% & 72% respectively).	RQ2: Cohort 2 87% – the same as Cohort 1 (2010) and higher than 2011.
% teacher activities	RQ1: Cohort 2 better with approximately equal amounts of activities compared with teacher primarily reading from textbook with little student interaction.	RQ1: Cohort 2 better with approximately equal amounts of activities compared with teacher primarily reading from textbook with little student interaction.
	RQ2: Cohort 2 similar to Cohort 1 (2010), though lower on 'Asking questions' and higher on 'Organising'.	RQ2: Cohort 2 similar to Cohort 1 (2010), though lower on 'Feedback' and higher on 'Organising'.

Although it was not part of the research questions, the *Introduction* posed a question about the impact of choosing schools with a higher CDI for Cohort 2 on the classroom practice of teachers. The evidence from this study does not indicate any impact, as there is as much variation in the comparisons between the figures of the two Cohort 1 studies as between either of them and the Cohort 2 study. However, this is not conclusive as this study was not designed to answer this question.

## **4.2 Summary of findings**

### **4.2.1 The amount of teacher talk time versus the amount of student talk time**

The study found that in both primary and secondary classes, teacher talk time took up just less than half the lesson, while student talk time took up approximately a quarter of the lesson. This compares favourably with other research into language classrooms, which established that teachers tend to do most of the classroom talk, with teacher talk around 70% of the total talk (Chaudron 1988, Cook 2008, Musumeci 1996). This marks an improvement from the findings in the baseline studies (EIA 2009a & b), which showed that in only a small proportion of lessons did the students have opportunities to participate actively in discussion.

### **4.2.2 Teachers' use of English**

The results show that both primary and secondary teachers in the EIA intervention were observed to be using English the majority of the time; the primary teachers used English 76% of the time, while the secondary teachers used English 87% of the time. This is a marked contrast to the baseline studies (EIA 2009a & b), where teachers spoke English less than Bangla in two-thirds of the lessons; it also improved on the Cohort 1 2011 study (EIA 2012a), where primary teachers used English 72% of the time and secondary teachers 79% of the time.

### **4.2.3 Students' use of English**

The data clearly support the observation that both primary and secondary students are using English the majority of the time when they spoke in lessons (91% of the time in primary and 88% of the time in secondary). This marks a notable change from the results of the baseline studies (EIA 2009a & b), which showed that students spoke in English in only a small proportion of lessons, and also shows a slight improvement on the Cohort 1 2011 study (EIA 2012a), particularly in primary lessons where students were observed to speak in English for 81% of the time (and 85% of the time in secondary lessons).

### **4.2.4 Teachers' use of interactive teaching strategies**

These latest findings mark a notable increase in the time teachers spent organising and a decrease in the time spent presenting when compared with the baseline (2009) and with the Cohort 1 2011 study. The results show that both primary and secondary teachers were using a wide range of activities in the classroom and involving students in these activities. In this study, primary teachers were found to be organising 32% of the time, presenting 25% of the time, asking questions 23% of the time, and giving feedback 20% of the time. Secondary teachers were found to be organising 29% of the time, presenting 32% of the time, asking questions 22% of the time, and giving feedback 17% of the time. This is a change from the baseline studies (EIA 2009a & b), where teachers were observed to be primarily reading from the textbook and rarely involving students in activities.

This more balanced percentage of time spent asking questions, organising, presenting and giving feedback indicates that teachers made great and sustained efforts to involve students in their English lessons.

### **4.2.5 Students' participation in interactive activities**

The results show evidence of student pair and group work being used in both primary and secondary classrooms. When students were talking, 36% of the time they were talking individually in primary and 53% in secondary classrooms; 10% of the time they were taking part in activities in which they were



speaking in pairs in primary and 13% in secondary; 8% of the time they were speaking in groups in primary and 15% in secondary; and 46% of the time they were speaking in chorus in primary and 19% in secondary.

In secondary classrooms, students were interacting with each other in pairs or groups for 28% of the class time and approximately 75% of that time was spent speaking in English. In primary classrooms, students were interacting in pairs and groups for 18% of the time, of which 90% was in English. This marks a notable change from the baseline studies (EIA 2009a & b), which identified few occasions when individual students or groups were encouraged to speak in English (2–4% of the lesson time) and which showed that in most classes students were not interactive at all. The figures also compare very closely with the Cohort 1 (2011) study (EIA 2012a), which observed secondary students working in pairs and groups for 28% of the time, and primary students for 10% of the time, thus showing a sustained use of interactive pair and group activities within English classes at scale.

#### ***4.2.6 The range of language skills practised in a lesson***

The current study observed that secondary students were involved in speaking and listening activities for 28% of their lessons (24% speaking and 4% listening), reading activities for 6% of the lesson and writing activities for 12% of the lesson. This marks a change from the results of the baseline studies (EIA 2009a & b), where teachers tended to read from the textbook, ask closed questions or move around the classroom monitoring and facilitating students as they worked individually. All other pedagogic activities were observed in less than 10% of classes. The Cohort 2 (2013) study shows slightly more time spent speaking and listening than the Cohort 1(2011) study (24% and 3% respectively).

#### ***4.2.7 Teachers' use of audio***

The results indicate that teachers were using audio materials for 4% of secondary lessons on average and 9% of primary lessons. The findings of the baseline studies (EIA 2009a & b) did not indicate that audio materials were being used in any of the classes observed.

#### ***4.2.8 In Summary***

In summary, the 2013 cohort of teachers observed in the EIA programme were using more English in their classes, involving students in more activities and encouraging them to spend more of their class time speaking in English.

## 5. Recommendations

This study shows that the EIA school interventions have been helping teachers to implement CLT practices in their classrooms, and that both cohorts achieved a similar degree of success. The higher number of teachers involved in Phase III Cohort 2 (4,368) and the inevitable reduction of face-to-face direct contact with experts in the ELT field (both national and international) and commensurate increase in peer support compared with the pilot phase intervention (Cohort 1) does not seem to have had any negative impact on teachers' classroom practice. Indeed, the more even division between the four elements of presenting, organising, asking questions and giving feedback evidenced in this current study suggests that teachers are being heavily influenced by input from the mediated video resources that model this practice. A comparison with the qualitative research (EIA 2014d) may show some interesting synergies in this area.

The focus on appropriate classroom language in the EIA video and print materials for professional development may have supported and had an impact on teachers' ability to use an appropriate level of English with their students, and the need for selective use of the mother-tongue to support their students' acquisition of English. The relationship between this focus on classroom language and the general EL competence of teachers is not clear and will benefit from an investigation in the data where measures of classroom practice and teacher EL competence are known for the same teachers, something that will be revealed in the composite report (EIA 2014c).

This study of Cohort 2 suggests that teachers are attempting to use a wider range of activities in the classroom and involve a greater number of students in activities (compared with the baseline studies [2009a & b]). The fact that teachers are asking more questions, organising and giving more feedback is an indication that they are attempting to implement more communicative practices in their teaching, again influenced possibly by the mediated classroom video materials. However, a deeper understanding of teacher–student and student–student classroom interactions (to be obtained through the current qualitative studies (EIA 2014d)) will provide detailed insight into the techniques of CLT that the teachers are implementing, and where they need further support.

While students are speaking more in lessons and using English the majority of the time, because of an increase in the amount of pair and group work, this improvement needs to be reinforced. Meaningful implementation of pair and group work among both primary and secondary teachers should be encouraged and can be analysed in more detail when looking at the richer data gleaned from recent EIA qualitative research (EIA 2014d). The implementation of increased communicative choral work should also be supported, particularly in secondary classrooms where it occurred relatively infrequently and in teaching large classes.

There is evidence in the data of speaking, listening, reading and writing being integrated in lessons; more qualitative observations will allow better insight into how these four skills are being integrated in classroom activities.

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## Appendices

Teacher ID : \_\_\_\_\_  
School ID : \_\_\_\_\_  
(internal use)

### Appendix 1: Observation schedule for classroom practice

#### TIMED OBSERVATION SCHEDULE

##### Researcher information

Researcher name	Observation date
-----------------	------------------

##### School information

School name	
Upazila/Thana	Division

##### Teacher information

Teacher name	Gender:	Male / Female
Age:	Highest qualification:	

##### Lesson information

Class:		Lesson no:	
Lesson start time:		Lesson finish time:	Duration of lesson (mins):
Enrolment:	Total no. of students:	No. of boys:	No. of girls:
Attendance:	Total no. of students in class:	No. of boys in class:	No. of girls in class:

On each minute, identify what is happening at that moment of observation. Write E (for 'English') or B (for 'Bangla') in the appropriate box to show whether that moment of the lesson is being taught in English or Bangla.

- Enter 'E' or 'B' in one of the columns under:
  - 'teacher is speaking' (if the teacher is speaking)
  - or
  - 'student(s) is speaking' (if a student(s) is talking)
  - or
  - 'students are' (if the student is carrying out an activity).

In addition, if visual materials are being used at the moment of observation, indicate what is being used in the 'Visual materials being used' column. Use the following letters to indicate the kind of materials being used:

- P = EIA poster or wall chart
- C = EIA cards (flash-cards) (used with Primary only)
- O = other visual aids (e.g. teachers own, perhaps a magazine, newspaper)

If neither the teacher nor the students are speaking, and the students are not reading, writing or listening to audio either, use the 'Other activity' column to indicate what other kind of activity is taking place. Make sure you do this for the duration of the entire class.

Further to this, remember to obtain consent from the teacher via the consent form. Ensure that they sign, date and record the time on 2 forms (the teacher should keep a copy of the form; and you should return the other to EIA project staff at the end of the fieldwork).

Insert the letter E or B once per row in these columns, if appropriate												Enter other activity (if appropriate)	
Time	The teacher is speaking. They are:			The student(s) are speaking.				Students are:			Enter P, C or OM		
	Presenting	Organizing	Asking questions	Giving feedback	On their own (single)	In pairs	In groups	Chorusing	Reading	Writing		Listening to audio	Visual materials being used
1													
2													
3													
4													
5													
6													
7													
8													
9													
10													
11													
12													
13													
14													
15													
16													
17													
18													
19													
20													
21													
22													
23													

Insert the letter E or B once per row in these columns, if appropriate												Enter P, C or OM	Enter other activity (if appropriate)	
Time	The teacher is speaking. They are:			The student(s) are speaking.					Students are:					
	minute	Presenting	Organizing	Asking questions	Giving feedback	On their own (single)	In pairs	In groups	Chorusing	Reading	Writing	Listening to audio	Visual materials being used	Other activity
24														
25														
26														
27														
28														
29														
30														
31														
32														
<i>Continuation sheet for 1 hr lessons</i>														
33														
34														
35														
36														
37														
38														
39														
40														
41														
42														
43														
44														
45														



Insert the letter E or B once per row in these columns, if appropriate												Enter P, C or OM	Enter other activity (if appropriate)
Time	The teacher is speaking. They are:					The student(s) are speaking.					Students are:		
minute	Presenting	Organizing	Asking questions	Giving feedback	On their own (single)	In pairs	In groups	Chorusing	Reading	Writing	Listening to audio	Visual materials being used	Other activity
46													
47													
48													
49													
50													
51													
52													
53													
54													
55													
56													
57													
58													
59													
60													

**Remember to obtain consent from the teacher via the consent form. Ensure they sign, date and record the time on 2 forms (the teacher should keep a copy of the form; and you should return the other to EIA project staff at the end of the fieldwork).**

## DEFINITIONS

### *The teacher is speaking*

#### **Presenting**

The teacher is giving information to the students. They may be describing, explaining or narrating, whether from the textbook or from their own knowledge, or from any other source. Students are expected to listen to the information. Examples include:

- T is reading from a book.
- T is modelling the target language (past tense): Yesterday I went to the market.
- T points to poster. Look at the picture. T points to the tree. The bird is in the tree.

#### **Organizing**

The teacher is telling the students what to do. The students are expected not only to listen, but also to do something according to the teacher's directions. Examples include:

- Read for five minutes and answer then answer the questions.
- We are going to listen to an audio about Mother Teresa.
- Listen to the audio and answer the two questions on the board.
- Stand up... sit down... make groups.
- Remember you don't need to read every word.
- Stand up when you have finished.

#### **Asking questions**

The teacher is asking questions. The students are expected to respond verbally (as opposed to organizing, when the students respond non-verbally). Examples include:

- What is the Bangla for 'magazine'?
- Can you describe the diagram?
- What do you think the girl is going to do?
- Who are the people in the picture?

#### **Giving feedback**

The teacher is responding to something the students have said or done, and evaluating or commenting on it. Examples include:

- Yes, that's correct.
- Not quite right. You need to use past tense.
- Well done, students.
- Oh, your picture looks very nice. But where is the river?
- S: He is catching the bus. T: He? S: Oh, she is catching...

### *The student(s) are speaking*

#### **On their own (Single)**

One student is speaking at this particular moment. The student may be talking to the teacher or with another student, or s/he may be reading aloud.

**In pairs**

All of the students are talking to each other in pairs.

**In groups**

All of the students are talking to each other in groups.

**Chorusing**

All of the class is speaking in chorus at the same time. This may be in response to the teacher's questions, or reading in chorus.

***The students are reading***

All or most of the students are reading something quietly. (If they are reading aloud, enter the activity under 'Student(s) are speaking')

***The students are writing***

All or most of the students are writing something quietly. (If they are discussing a writing task in pairs or groups, enter the activity under 'Student(s) are speaking')

**The students are listening to audio**

The teacher is playing an audio resource and students are listening.

**Other activity**

This could be any activity taking place in the classroom which does not fit into one of the categories above. For example:

1. Teacher is preparing learning materials.
2. Teacher is using the blackboard.
3. Teacher is checking students' work.
4. Teacher is doing administrative work.
5. Teacher is asking students to bring things from outside.
6. Students are getting in to pairs or groups

## Appendix 2: Power analysis for sample sizes

The sample sizes were determined using R statistical program with 'pwr' package developed for power analysis. Power analysis provides probability of correctly rejecting the null hypothesis when it is false. In the R package 'pwr' sample sizes (n2) can be determined providing the known parameters (effect size [d], sample size [n1] to which the next study will be compared, significant level and the power). The effect sizes (d) used here are taken from Cohen (1988) as parameters (means and standard deviation) for determining actual effect sizes from the existing studies could not be retrieved. Cohen's suggested effect sizes ranged from small to large (0.2 to 0.8). Smaller effect size needs higher sample size to prove statistically significant difference. R 'pwr' package was set for two group independent sample (N1 and N2) t-test.

	N1 (2012)	Effect size	Power1	Suggested N2 (2013) for Power1	Power2	Suggested N2 (2013) for Power2	Power3	Suggested N2 (2013) for Power3	Significant level	SAMPLE SIZE
Primary	195	0.3	70%	171	75%	208	80%	264	0.01	416 observations 266 P; 150 S (133 P schools; 75 S schools)
Secondary	129	0.3	70%	89	75%	113	80%	149	0.05	
Total								413		

### Appendix 3: Detailed sampling strategy

A multi-layer stratified random sampling strategy underpinned the sample selection, with random sampling used where possible. The process began by selecting upazilas, then clusters within those upazilas, then schools within the clusters.

#### Stage 1: Upazila selection

A total of 14 upazilas (see Table 17) were selected from the full list of 35 upazilas in which EIA is active in Government schools. To begin with, all 35 upazilas were categorised as predominately rural or urban. This was established by reviewing demographic information about teachers participating in Cohort 2 held on the EIA PMIS (Project Management Information System) database; specifically, location information about where the teachers live – i.e. rural, urban or municipal area. This information was then reviewed for the entire 2012 cohort of teachers to establish the proportion of participating teachers from rural and urban locations.

An online random-number generator (<http://www.random.org/integers/>) was then used to select two upazilas per division, except Dhaka division where three upazilas were selected to compensate for population density. After this, the upazilas selected were reviewed to check whether they reflected the rural/urban proportions within the population of EIA teachers.

Table 17: Upazilas and clusters selected during sampling

Division	District	Upazila	Rural/ urban	CLUSTER	
				Primary (number)	Secondary(number)
Rangpur	Nilphamari	Domar	Rural	2	1
	Lalmonirhat	Patgram	Rural	1	1
Rajshahi	Rajshahi	Puthia	Rural	2	2
	Natore	Shingra	Rural	1	2
Dhaka	Kishoreganj	Sadar	Urban	2	2
	Dhaka	Mohammadpur	Urban	2	2
		Sutrapur	Urban	1	2
Sylhet	Sunamgan	Sadar	Urban	2	2
		Jagannathpur	Rural	1	2
Khulna	Kushtia	Sadar	Urban	2	2
	Meherpur	Gangni	Rural	2	1
Chittagong	Bandarban	Ruma/Roangchhari	Rural	1	2
	Anwara	Anwara	Rural	1	2

### ***Stage 2: Cluster selection***

Each upazila in which EIA is active has five clusters: two primary, two secondary and one primary head teacher. One primary and one secondary cluster were chosen per upazila in order to select both primary and secondary schools within that upazila. The online random number generator was used to select a primary and a secondary cluster in each upazila (see Table 17).

### ***Stage 3: School selection***

Each cluster consists of approximately 24 teachers from 12 schools. Using the online random number generator, 10/11 schools were selected from the primary cluster and 5/6 from each secondary cluster. Within each upazila, a total of 16 schools were selected (10/11 primary; 5/6 secondary).

### ***Stage 4: Teacher selection***

There are two assistant teachers (ATs) and one head teacher taking part in the EIA programme in each primary school that is part of the programme. Therefore, primary head teachers make up one-third of primary personnel taking part in the programme. As this study required two teachers from each primary school, it was necessary to select from among the three participating teachers. The online random number generator was used to select three or four schools per upazila where the head teacher would be observed (approximately a third of primary schools), and then used again to select which of the two ATs would be observed. In each secondary school selected, both of the EIA teachers were selected for observation.

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<sup>18</sup> The municipal and urban categories were merged and classed as urban.

<sup>19</sup> Again, municipal and urban categories were merged.

## Appendix 4: Sample description & population demographics – Cohort 2 teachers

### SAMPLE DESCRIPTION

Pri	230	57%
Pri HT	26	6%
Sec	145	36%
<b>TOTAL</b>	<b>401</b>	

GENDER	Pri & Pri HT		Sec		Total	
	Pri	Pri HT	Sec	%	Total	%
Male	99	39%	114	79%	213	53%
Female	157	61%	31	21%	188	47%
<b>TOTAL</b>	<b>256</b>		<b>145</b>		<b>401</b>	

DIVISION	Pri & Pri HT		Sec		Total	
	Pri	Pri HT	Sec	%	Total	%
Chittagong	38	14.8%	20	13.8%	58	14.5%
Dhaka	58	22.7%	34	23.4%	92	22.9%
Khulna	40	15.6%	22	15.2%	62	15.5%
Rajshahi	39	15.2%	23	15.9%	62	15.5%
Rangpur	39	15.2%	24	16.6%	63	15.7%
Sylhet	42	16.4%	22	15.2%	64	16.0%
<b>TOTAL</b>	<b>256</b>		<b>145</b>		<b>401</b>	

LOCATION	Pri & Pri HT		Sec		Total	
	Pri	Pri HT	Sec	%	Total	%
Rural	138	55.4%	83	70.9%	221	60.4%
Semi-urban	79	31.7%	31	26.5%	110	30.1%
Urban	32	12.9%	3	2.6%	35	9.6%
<b>TOTAL</b>	<b>249</b>		<b>117</b>		<b>366</b>	
Blanks	7		28		35	
<b>TOTAL</b>	<b>256</b>		<b>145</b>		<b>401</b>	

### EIA TEACHER POPULATION (COHORT 2)\*

Pri	1802	41%
Sec	1666	38%
Pri HT	900	21%
<b>TOTAL</b>	<b>4368</b>	

GENDER	Pri		Sec		Overall	
	Pri	%	Sec	%	Total	%
Male	45%		79%		62%	
Female	55%		21%		38%	
<b>TOTAL</b>	<b>100%</b>		<b>100%</b>			

DIVISION	Pri		Sec		Overall	
	Pri	%	Sec	%	Total	%
Chittagong	15%		16%		15%	
Dhaka	28%		24%		26%	
Khulna	10%		14%		12%	
Rajshahi	16%		19%		17%	
Rangpur	15%		18%		16%	
Sylhet	17%		10%		13%	
<b>TOTAL</b>	<b>100%</b>		<b>100%</b>			

LOCATION	Pri		Sec		Overall	
	Pri	%	Sec	%	Total	%
Rural	56%		67%		62%	
Non-rural	44%		33%		39%	
<b>TOTAL</b>	<b>100%</b>		<b>100%</b>			

\* Data regarding EIA's Cohort 2 teacher population demographic make-up is derived from returned teacher 'entry' (i.e. registration) questionnaires completed by teachers at EIA orientation workshops. 79% of questionnaires were returned.

## Appendix 5: Data cleaning steps

The following actions were taken to clean the dataset:

- a data screening exercise by range checking, and checking variable values against predefined maximum and minimum bounds to catch spurious values or data entry;
- contingency tables constructed to carry out consistency checks;
- missing data, non-responses, data imputation for missing values dealt with, and outlier detection to ensure the data is in the right shape and format for analysis;
- data transformation, involving re-categorising and altering variables (e.g. from original string to numerical variable);
- derived/newly created variables from existing variables.



## Appendix 6: Tests of significance used in the report

### PRIMARY

#### Types of teacher talk (primary): 2010, 2011 & 2013

Teacher talk	Cohort 2 (2013)	Cohort 1 (2010)	Sig test
Presenting	24.8%	23.1%	.897
Asking questions	23.1%	28.1%	.000
Organising	32.5%	27.1%	.038
Giving feedback	19.6%	19%	.483

Teacher talk	Cohort 2 (2013)	Study 2a2 (2011)	Sig test
Presenting	24.8%	39.9%	.000
Asking questions	23.1%	27.3%	.000
Organising	32.5%	21.9%	.000
Giving feedback	19.6%	10.8%	.000

#### Types of teacher talk: English vs. Bangla (primary): 2011 & 2013

Teacher talk	Cohort 2 (2013)		Cohort 1 (2011)		% English	% Bangla
	% English	% Bangla	% English	% Bangla	Sig test	Sig test
Presenting	81.6%	18.4%	71.2%	28.8%	.000	.000
Asking questions	80.6%	19.4%	72.4%	27.6%	.000	.000
Organising	69.3%	30.7%	65.6%	34.4%	.048	.036
Giving feedback	76.4%	23.6%	83.3%	16.7%	.735	.026

#### Types of student talk (primary): 2010, 2011 and 2013

Student talk	Cohort 2 (2013)	Cohort 1 (2010)	Sig test
Single	36.1%	30.3%	.014
In pairs	9.6%	13.6%	.054
In groups	7.9%	15.6%	.003
In chorus	46.4%	40.1%	.011

<b>Student talk</b>	<b>Cohort 2 (2013)</b>	<b>Cohort1 (2011)</b>	<b>Sig test</b>
Single	36.1%	37.9%	.381
In pairs	9.6%	4.9%	.004
In groups	7.9%	4.5%	.013
In chorus	46.4%	52.7%	.006

#### **Types of student talk: English vs. Bangla (primary): 2011 and 2013**

<b>Student talk</b>	<b>Cohort 2 (2013)</b>		<b>Cohort 1 (2011)</b>		<b>% English</b>	<b>% Bangla</b>
	<b>% English</b>	<b>% Bangla</b>	<b>% English</b>	<b>% Bangla</b>	<b>Sig test</b>	<b>Sig test</b>
Single	90.8%	10.2%	74%	26%	.000	.000
In pairs	93.6%	6.4%	82%	18%	.467	.000
In groups	86.4%	13.6%	70%	30%	.016	.000
In chorus	90.3%	9.7%	87%	13%	.000	.000

#### **SECONDARY**

#### **Types of teacher talk (secondary): 2010, 2011 & 2013**

<b>Teacher talk</b>	<b>Cohort 2 (2013)</b>	<b>Cohort 1 (2010)</b>	<b>Sig test</b>
Presenting	32.4%	30.3%	.139
Asking questions	21.6%	26.0%	.016
Organising	29.4%	19.6%	.001
Giving feedback	16.6%	23.8%	.037

<b>Teacher talk</b>	<b>Cohort 2 (2013)</b>	<b>Cohort 1 (2011)</b>	<b>Sig test</b>
Presenting	32.4%	45.2%	.004
Asking questions	21.6%	22.9%	.831
Organising	29.4%	22.3%	.006
Giving feedback	16.6%	9.6%	.048

#### **Types of teacher talk: English vs. Bangla (secondary): 2011 & 2013**

<b>Teacher talk</b>	<b>Cohort 2 (2013)</b>		<b>Cohort 1 (2011)</b>		<b>% English</b>	<b>% Bangla</b>
	<b>% English</b>	<b>% Bangla</b>	<b>% English</b>	<b>% Bangla</b>	<b>Sig test</b>	<b>Sig test</b>
Presenting	83.8%	16.2%	81.0%	19.0%	.004	.603
Organising	84.7%	15.3%	71.0%	29.0%	.684	.000
Giving feedback	91.1%	8.9%	81.4%	18.6%	.001	.003
Asking questions	88.3%	11.7%	79.0%	21.0%	.052	.039

**Types of student talk (secondary): 2010, 2011 and 2013**

<b>Student talk</b>	<b>Cohort 2 (2013)</b>	<b>Cohort 1 (2010)</b>	<b>Sig test</b>
Single	52.6%	39.1%	.000
In pairs	13.3%	31.2%	.000
In groups	14.8%	26.3%	.000
In chorus	19.3%	3.4%	.000

<b>Student talk</b>	<b>Cohort 2 (2013)</b>	<b>Cohort 1 (2011)</b>	<b>Sig test</b>
Single	52.6%	50.0%	.601
In pairs	13.3%	15.0%	.661
In groups	14.8%	12.5%	.632
In chorus	19.3%	22.5%	.178

**Types of student talk: English vs. Bangla (secondary): 2011 and 2013**

<b>Student talk</b>	<b>Cohort 2 (2013)</b>		<b>Cohort 1 (2011)</b>		<b>% English</b>	<b>% Bangla</b>
	<b>% English</b>	<b>% Bangla</b>	<b>% English</b>	<b>% Bangla</b>	<b>Sig test</b>	<b>Sig test</b>
Single	92%	8%	87.5%	12.5%	.523	.000
In pairs	84.6%	15.4%	91.7%	8.3%	.027	.524
In groups	63.8%	36.2%	70.0%	30.0%	.537	.692
In chorus	92.3%	7.7%	83.3%	16.7%	.176	.000

## Appendix 7: Composite deprivation index & quintile analysis: Comparison on Cohort 2 (post-test) vs Cohort 1 2011

### Notes:

All CDI and quintile values extracted from UNICEF (2010).

Composite Deprivation Index (CDI) value (UNICEF 2010) is a number on a scale between -15 and +15, where -15 expresses maximum deprivation and +15 maximum advantage.

The quintile value (UNICEF 2010) is a number on a scale running between 1 and 5, where 1 represents a least deprived upazila and 5 a most deprived upazila

2013 observations	Quintile value	CDI index value	Number of observations	OBSERVATIONS	
				Proportion	Weighted CDI value
Anowara	3	-2	29	0.07	-0.14
Gangni	2	4	30	0.07	0.30
Kishoregonj sadar	3	-2	32	0.08	-0.16
Mohammadpur	3	0	28	0.07	0.00
Patgram	2	1	32	0.08	0.08
Puthia	2	2	32	0.08	0.16
Bandarban/ Ruma / Roangchhari*	4.6	-13.66	29	0.07	-0.99
Domar	3	-2	31	0.08	-0.15
Singra	3	-3	30	0.07	-0.22
Jagganuthpur	3	-4	32	0.08	-0.32
Khustia Sadar	2	3	32	0.08	0.24
Sutrapur*	3	-4	32	0.08	-0.32
Sunamganj sadar	3	-6	32	0.08	-0.48
			401	1.00	
<b>TOTAL VALUES – 2013</b>	36.6	-26.66			-2.01
<b>AVERAGE VALUES – 2013</b>	2.8	-2.1			-0.15

\* CDI and quintile values were averaged for these upazila, as work in those upazila were combined during the fieldwork.

2011 observations	Quintile value	CDI index value	Number Pri	Number Sec	Total observations	Proportion	Weighted CDI value
Chittagong	2	4	9	0	9	0.03	0.11
Comila	3	0	7	0	7	0.02	0.00
Cox's Bazar	4	-7	10	0	10	0.03	-0.22
Gazipur	1	6	13	14	27	0.08	0.50
Gopalganj	2	3	0	10	10	0.03	0.09
Jessore	2	4	6	0	6	0.02	0.07
Jhalokathi	1	10	13	10	23	0.07	0.71
Khulna	2	5	13	12	25	0.08	0.39
Lalmonoharat	3	0	13	12	25	0.08	0.00
Laxmipur	3	-1	13	15	28	0.09	-0.09
Narshindi	3	-1	13	17	30	0.09	-0.09
Pirojpur	2	5	6	0	6	0.02	0.09
Rajbari	2	2	6	0	6	0.02	0.04
Rajshahi	2	3	13	15	28	0.09	0.26
Rangamati	3	-6	13	15	28	0.09	-0.52
Satkhira	2	1	7	0	7	0.02	0.02
Seraniganj	3	-3	7	0	7	0.02	-0.06
Sunamganj	4	-9	7	0	7	0.02	-0.19
Syhet	3	-1	13	9	22	0.07	-0.07
Tungipara	2	4	13	0	13	0.04	0.16
			195	129	324	1.00	

**TOTAL VALUES - 2011**      49      19      1.20

**AVERAGE VALUES - 2011**      2.45      0.95      0.06

**Difference 2013 vs 2011**      **-0.37**      **3.00**      **0.21**

\*\* There is no CDI value for Suturapur, so CDI value for adjacent upazila (Shyampur) with similar characteristics used.





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