

Using Critical Questions to Scaffold Conceptual Understanding in English and Maths Lessons

Nur Millah Binte Rasimin
Rern Yi Pierre E

Xingnan Primary School,
Singapore

Abstract

In this study, we investigated the hypothesis that critical questions (CQs) would help pupils at P3 and P5 to develop their thinking, and verbalise their ideas, thus enabling pupils to provide better and more in-depth responses in their written work. CQs in the English comprehension lessons were questions to which the answers could not be found directly from the text. CQs in the Mathematics lessons were questions that challenged the Mathematical concepts taught, causing disequilibrium in learning. A second hypothesis we investigated was that the pupils' level of engagement would increase when CQs were asked in class. Both the hypotheses were supported by our findings.

Introduction

Education in the past required pupils to mostly regurgitate information, whereas education today requires pupils to explain and justify their ideas. This is evident in the Mathematical Framework in Singapore's Primary Mathematics Syllabus (Curriculum Planning & Development Division [CPDD], 2012, p. 15), under "reasoning, communication and connections", where pupils are expected to learn how to explain and justify their methods.

- Mathematical reasoning refers to the ability to analyse Mathematical situations and construct logical arguments. It is a habit of mind that can be developed through application of Mathematics in different contexts.
- Communication refers to the ability to use Mathematical language to express Mathematical ideas and arguments precisely, concisely and logically. It helps pupils develop their understanding of Mathematics and sharpen their Mathematical thinking.
- Connections refer to the ability to see and make linkages among Mathematical ideas, between Mathematics and other subjects and between Mathematics and the real world. This helps pupils make sense of what they learn in Mathematics. (CPDD, 2012, p. 15)

It is also evident in the Singapore Primary English Syllabus that teachers need to teach pupils listening and speaking skills. The English Language Syllabus 2010 states that:

The acquisition and development of listening and viewing skills, along with speaking and representing, are especially necessary in building a strong foundation in English at the start of language learning. Mastery of these skills allows for quality interaction and collaborative learning in and outside of the classroom, ... (CPDD, 2008, p. 19)

Thus, giving opportunities for pupils to develop and articulate their thinking is vital.

Literature Review

In order to develop a deeper understanding of an English text or a Mathematical concept, pupils need to verbalise their thoughts. According to Ritchhart, Church & Morrison (2011), there are eight ‘thinking moves’ that are integral to developing this understanding:

1. Observing closely and describing what’s there
2. Building explanations and interpretations
3. Reasoning with evidence
4. Making connections
5. Considering different viewpoints and perspectives
6. Capturing the heart and forming conclusions
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7. Wondering and asking questions
8. Uncovering complexity and going below the surface of things
(Ritchhart, Church & Morrison, 2011, pp. 11 & 13)

While the authors indicate that this is not an exhaustive list, the moves provide a starting point for teachers to look into helping pupils verbalise their thoughts. It allows teachers to have a window to access what the pupil understands and how the pupil understands. Uncovering pupils’ thinking gives evidence to teachers about their insights as well as their misconceptions so that they can be addressed. Lessons need to be designed with this goal in mind to avoid superficial learning.

Vygotsky (1978) explained that people learn best through social experiences. He coined the term Zone of Proximal Development (ZPD), which refers to the gap between what can be achieved alone and what can be achieved with the help of a more knowledgeable other, either a knowing peer or an adult such as a teacher or parent. Vygotsky believed that spoken interaction allows pupils to clarify doubts and helps to internalise concepts. Hence, asking pupils critical questions and providing opportunities for pupils to discuss can help them gain a better and more concrete understanding of the subject matter.

Critical thinking, as defined by Glaser (1941), “calls for a persistent effort to examine any belief or supposed form of knowledge in the light of the evidence that supports it” (Glaser, 1941, p. 6). In this research, the term ‘critical questions’ refers to questions that foster critical thinking in pupils by encouraging them to think more deeply, and to seek evidence to support their answers.

In the Primary English Syllabus, under learning-focused interaction, teachers are to “provide a rich learning environment for communication that will explicitly foster listening and speaking skills” (CPDD, 2008, p. 11). It is then necessary to develop critical questions that will engage the pupils and make the discussions richer, which will then allow better understanding of the subject content.

In the Primary Mathematics syllabus, in the Mathematical Framework, pupils are required to demonstrate “reasoning, communication and connections” (CPDD, 2012, p. 15). Doing Mathematics is no longer simply about solving the problem, but rather it is about verbalising the thoughts behind the steps. It is about conceptual understanding, which can only be developed if disequilibrium or discourse is introduced through critical thinking questions.

Seto (2002) asked her Primary 4 pupils to do oral presentations instead of written practice in preparation for their examinations. She found that talk in the Mathematics classroom helped her to identify areas of weakness among the pupils, giving her the opportunity to modify her teaching. It also allowed the pupils to learn from each other and prepared them for the possibility of being

wrong. It created a culture of openness as pupils became confident in sharing their ideas with their peers. This was an ideal situation that we planned to recreate in our classrooms.

Hu, Jia, Plucker and Shan (2016) conducted a study where the pupils had an open, democratic and supportive atmosphere in class. Pupils were given time to discuss their ideas openly with their peers and to evaluate one another's views. This resulted in the pupils being less afraid to share their ideas with the rest of the class and it improved their motivation towards learning. Pupils were also taught to reflect and summarise the methods or strategies that they had used. There was a strong correlation between metacognition and motivation.

As well as encouraging the development of the thinking moves, teachers need to be equipped to conduct lessons which encourage spoken interaction. Hudson, Henderson and Hudson (2015), in their study of Scottish primary school teachers, found that developing mathematical thinking in a primary classroom was paramount. This study led to teachers conducting lessons which allowed pupils to exercise their creativity and increased their autonomy towards their learning. Similarly, Doğan Coşkun and Işıksal Bostan (2018) conducted a study with a beginning teacher. The teacher made thinking visible by making connections between Mathematical concepts. Some teacher-modelling was vital so that pupils could emulate the thinking processes that went into understanding a particular concept.

In another study by Huh and Suh (2015), where social issues in the English classroom were central, pupils showed that they were able to confront the dominant ideologies of different social issues and challenge them verbally. Pupils were able to challenge the author's representations of social issues through spoken interactions. This was possible because of the encouragement and safe environment that had been provided by the teachers.

Being aware of the studies just cited, we chose to do a further study of the engagement level of pupils when critical questions were asked during lessons. The research aim of the study reported here was to determine whether critical questions asked by the teacher would help pupils to develop their thinking, verbalise their ideas, thus enabling them to provide better and more in-depth responses in their written work.

Research Questions

The main research question was:

How does asking the right critical questions affect the quality of pupils' responses?

The sub-questions were:

1. *Does asking critical questions help pupils in their thinking (as evidenced in their discussions)?*
2. *Does asking critical questions help pupils in their verbal expression (as evidenced in their written work)?*
3. *Does asking critical questions increase the engagement level of pupils (as evidenced through observations)?*

Methodology

Participants

Primary 3 Class

One group of participants for this study was a class of 32 Primary 3 low progress pupils in a typical neighbourhood school in Singapore. This class had seven pupils diagnosed with special needs. Four

pupils had dyslexia, one pupil had global developmental delay and two pupils were diagnosed with autism. Of these 32 pupils, 19 were girls while 13 were boys. Some 25 of the participants spoke their Mother Tongue at home while the other seven pupils spoke English at home.

Primary 5 Class

The second group of participants for this study were 40 Primary 5 middle progress pupils from the same school. There were 23 boys and 17 girls. There were two pupils diagnosed with special needs in this class, one with autism and one with dyslexia. Of the pupils in this class, 23 spoke mainly Mother Tongue at home while the other 17 pupils spoke English at home.

Intervention

The intervention involved a total of four lessons: one English lesson for the Primary 5 class, one Mathematics lesson for the Primary 5 class, one English lesson for the Primary 3 class, and one Mathematics lesson for the Primary 3 class.

For English, pupils in both classes first sat for a pre-test which was a reading comprehension paper. There was no discussion before they sat for the test. They were given 20 minutes to complete the test. During the intervention (a 40-minute lesson), pupils were given a different comprehension passage. The teacher presented the text in chunks and critical questions (CQs) were asked to help pupils with their understanding of the text. Examples of the texts and related questions are given in Figures 1 and 2 below.

It is believed they laid the traps there to catch wild boars for food. When farmers moved out of the forest, they left their dogs behind. The dogs lived in deserted areas, and looked for food in the forest. They were often badly injured after stepping on these traps. Many people became aware of the dogs' pitiful situation when someone posted pictures online of the injured dogs. Some dogs had only one, two or three limbs left.

Critical Questions:

1. Why did the farmers leave their dogs behind?
2. What does 'deserted' mean? Why did those dogs live there?
3. What do you think happened immediately after the dogs lost their limbs?
4. How do you think these dogs survived?

Figure 1. An excerpt of the Primary 3 English lesson showing a text chunk and CQs

A mass of people came slowly around the bend. They struggled along under the weight of their belongings. These must be the poor who had evacuated Hengyang on foot when the cannon first began to thunder. They must have been walking for days to get this far. The surroundings became alive with their voices.

Critical Questions:

1. Were there a lot of people or just a few? How do you know?
2. What does 'The surroundings became alive with their voices' mean?

Figure 2. An excerpt of the Primary 5 English lesson showing a text chunk and CQs

Pupils then responded to the comprehension questions. Again, 20 minutes were allocated. The

results of the pre-test and post-test were analysed. The mean scores were computed to determine if there had been any improvement. Going a step further, the scores of each individual pupil were tracked to see the number of pupils who had shown improvement.

The two English lessons were recorded so that they could be transcribed and a detailed analysis of the responses could be studied. The responses of the pupils were discussed with the ELIS mentors to see if they showed depth. It was interesting to check whether those pupils who voiced their opinions actually showed improvement in their post-test.

While the lessons were being conducted, a teacher observer sat in front of the class to observe the pupils, noting their engagement using a checklist (Appendix A). The teacher observer also provided a reflection based on the questions developed during a conversation with the ELIS mentors (Appendix B). The teacher conducting the lessons also provided a reflection based on the lessons conducted, looking at engagement as well as the perceived depth of answers provided during the intervention as compared to normal daily responses given in class. Part of the reflection included the number of active pupils volunteering to answer the questions.

Finally, a focus group discussion was conducted (Appendix C) with the pupils and the conversation was recorded for transcription. This provided a better understanding for the researchers of how the pupils felt during the lesson.

For Maths, there was one Primary 3 Maths lesson and one Primary 5 Maths lesson. For the two Mathematics lessons, pupils were asked a question which challenged their conceptual understanding of a mathematical concept. They worked in groups where their conversations were recorded. The teacher and a teacher observer walked around to assess their conversations. Finally, the pupils were given a chance to present their answers to their peers. As in the English lessons, the teacher observer looked out for engagement cues from pupils and later provided their reflections on the lesson. The class teacher also wrote a reflection about the engagement level and the responses of the pupils during the CQ discussion. Finally, a focus group discussion was held to find out what the pupils thought of the lesson.

SIO: Deduce that different figures with the same perimeter need not have the same area and vice versa.
CQs: 1. Will the area of any given figure be the same if the perimeter remains the same? Investigate and explain. 2. Will the perimeter of any given figure be the same if the area remains the same? Investigate and explain.

Figure 3. The Specific Instructional Objective (SIO) and the CQs for the Primary 3 Maths Lesson

SIO: State the relationships between squares, rectangles, rhombuses and parallelograms.
CQs: 1. Is a square a kind of rectangle? Discuss. 2. Is a rhombus a parallelogram? Why? Discuss.

Figure 4. The Specific Instructional Objective (SIO) and the CQs for the Primary 5 Maths Lesson

There was no pre-test or post-test for Mathematics. However, a similar question was set and pupils

had to complete the question at the end of the hour-long lessons. These questions were marked and the number of pupils getting this question correct provided quantitative data, explaining the success or failure of the lesson.

The quality of the pupils' responses in this research was determined based on the length of the response (at least 10 words) and the evidence which they gave in support. The response could also build upon other pupils' responses.

Findings

Written Pre- and Post-Tests

For the Primary 3 English class, during the pre-test, five out of 32 pupils passed. The pass mark was 5 out of 10, a pass mark of 50% being the norm for tests conducted in Singapore primary schools. The mean score of the pupils was 3.2 out of 10 marks. In the post-test, 22 out of 32 pupils passed. The mean score of the pupils was 6.3 out of 10 marks. Individually, 27 pupils showed an improvement of at least one mark between the tests.

For the Primary 5 English class, during the pre-test, 15 out of 40 pupils passed. The pass mark was 10 out of 20. The mean score of the pupils was 8.8 out of 20 marks. In the post-test, 23 out of 40 pupils passed. The mean score of the pupils was 10.4 out of 20 marks.

For the Primary 3 Mathematics class, seven out of the 32 pupils could explain the question correctly whilst 11 of them attempted to explain. The remaining 14 pupils submitted a blank sheet, indicating that they were clearly unsure of how to explain the question.

For the Primary 5 Mathematics class, there was no post-lesson data collected because there was not enough time to carry out this section.

Classroom discourse

From the excerpts of the transcripts below, it can be seen that the CQs helped pupils think aloud and verbalise their answers. Additionally, the pupils were given the chance to clarify and correct their responses.

Transcripts of classroom talk: English language lessons

The teacher asked CQs to help pupils understand the text at a deeper level. Wait time (6 to 8 seconds) was given for the pupils to respond. Additionally, pupils were given the opportunity to elaborate and clarify their answers.

As can be seen in Figure 5 for example, in response to T1 asking P1 to elaborate, P1 suggested: "No, when the stray dog was walking, they did not see the traps. Got trap by the legs." This showed how P1 had managed to infer how the dog had been trapped.

T1	OK, today, we're going to learn about comprehension varied. So, it's how to answer comprehension in different ways, different, uhh, to answer the questions when it's given differently. So, we're going to do chunking. So, I'm going to read the text first. We're going to read the text first and then I will ask you some questions. So, the first part: 'Stray dogs have been losing their legs after they were trapped by boar traps in the forest. Monkeys and even endangered species such as the pangolins have also been caught by the traps. It is not known who is laying the traps, although groups of men have been seen entering the forested areas.'
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Yeah, I'll give you one minute to read it quietly on your own, in your heart.

[Pupils read text silently.]

OK, I'll ask you some questions. If anyone wants to answer, raise up your hands. 'How do you think the traps had caused the stray dogs to lose their legs?'

Yes, P1? Speak louder please.

P1 Maybe the traps were, the traps were, were trapped by the leg?

T1 Maybe the traps were trapped by the leg. Can you elaborate on this? What exactly do you mean?

P1 No, when the stray dog was walking, they did not see the traps. Got trap by the legs.

T1 So, when you cannot see the trap, your legs might get trapped? Yes P2?

P2 Is it a bear trap?

T1 A boar, the word 'boar' is actually a wild pig. The wild pigs.

P2 The circle thing is a bear trap.

Figure 5. A short excerpt of the Primary 3 English lesson

Through CQs, pupils examined their own line of reasoning as a class. Through the CQs, pupils built on each others' ideas and developed a clearer understanding of the text, as can be seen in Figure 6.

T2 A lot of people. P9?

P9 Poor?

T2 Poor. It says here 'poor'. How would you know they're poor? They must be poor. OK, yes?

P10 Struggle?

T2 Struggle, they're struggling. Why do you think they're struggling?

P11 'The weight of the [inaudible]'

T2 The weight of the ... things they're carrying? Good. Any other reason why they might be struggling? P12?

P12 Cause they've been walking for days.

T2 'They have been walking for days.' It says there. OK, they were on foot. 'On foot' means they were walking. OK, so they've been there for days. Walking for days to get this far. Alright, OK, so someone mentioned 'the [inaudible] came alive with their voices'. What does that mean?

P13 Uhh, people [inaudible] kept getting closer and closer.

T2 Getting closer, getting louder. Yep, OK, so you can tell that the surroundings were quiet. People around were getting noisier and noisier, as more and more people came. OK, so do you think these people are friendly people?

Ps No!

T2 No? Who says 'no'? [A few Ps raise their hands] Who says 'yes'? [A few Ps raise their hands] Why do you think they're friendly?

Figure 6. A short excerpt of the Primary 5 English lesson

Transcripts of discussions: Mathematics

Even though there were many parts of the discussions that were off topic, there were a couple of fruitful Mathematical conceptual discussions going on in both classes.

Pupils were verbalising their thoughts, and explicitly verbalising their content knowledge of perimeter and area, as can be seen in Figure 7. They corrected one another and built on each other's answers.

- P4 We need 16 cm but different area.
Let's draw this. Let's draw one. You draw your own self per metre. You also.
- P1 How? How? How? How?
- P2 Need, uhh, 16 per metre.
- P3 16 perimeter inside.
- P4 But different area. Area means it's inside.
- P3 If it's inside, it means it's 1, 2, 3, 4, 5, 6, 7, 8.
- P1 Stop talking, you two.
- P3 And then like that. And then perimeter [laughs] Perimeter is outside.
- P1 Huh?
- P3 So, it's like 1, 2, 3, 4, 5
- P1 I don't understand. Is it like 16? You put like 16 right? We need to count inside the box.
- P4 Wait, what the ... ?
- P2 We put 16, but different area.
- P4 OK guys, draw in the thinking box *right now*.
- P2 You mean we need to write a box?
- P4 No! Draw different pattern [laughs]

Figure 7. Primary 3 Maths Group Discussion – Group 1

Pupils were able to verbalise their thinking, engaging in a rich discussion of the Mathematical concept taught. As can be seen in Figure 8, P4 was attempting to follow the line of reasoning put forward by the teacher. However, the pupils also expressed confusion. It is possible that the teacher's CQs created too much disequilibrium which resulted in the pupils becoming less clear about the concepts of quadrilaterals.

- P1 [laughs] ... How do you get the answer?
- P2 Yeah, how?
- P4 Cause a rectangle is a square. A square is a rhombus.
- P2 Rhombus? [laughs]
- P1 OK, continue
- P4 OK, *rhombus*. Then ... They are all related and teacher already said – a rhombus is a square. And then a square is a ... rhombus. And then a rectangle is a square. And then they are all the same thing.

P1 Then?

P4 So, it's like just the ... I don't get what they're asking – 'what is the least number of shapes'?

P3 This is confusing! It seemed like a simple question!

P4 Because we have to know, you know rectangle, plus 5, plus 8. 11 plus 5, plus 8. That means they're asking how many shapes are there altogether? Or, they are asking – what kind of shapes there is [laughs]
 What's the least number kind of shapes there is? So, if it's the least number kind of shapes there is, what kinds of shapes there is in this whole figure, it will be 1.
 [Ps laugh because someone is playing with the iPad.]
 But then if they are asking for the whole thing, if they are asking about the whole thing, the addition of everything, including the rectangle, rhombus and square, it gives you adding up the total number together. Now, we got to ask teacher, whether it's the least number of kinds of shapes, types of shapes, or how many is there altogether?

Figure 8. Primary 5 Maths Group Discussion – Group 2

Excerpts of the focus discussions

A second hypothesis investigated in this research was whether pupils' level of engagement increased when CQs were asked in class. To look at this hypothesis, excerpts from the focus group discussions are given in Figures 9 and 10 below.

P1 mentioned that the lesson was “fun”. P1 and P2 found the lesson to be “interesting” (Figure 9).

T1 What did you think of the (English Language) lesson the day before? You said it was fun right? OK so P1, what did you find so fun about it?

P1 ... I find fun about it because it's very very weird and incidentally very interesting to ... know.

T1 Ah, OK. Who else thought it was a fun lesson? P2?

P2 I think it's interesting because about the wild traps because I never ever heard of wild traps. Then they actually want to catch like bears or what. Then... end up the dogs. Then the dogs very sad because they want to like, walk around and the owner is not responsible enough, don't care about the dog.

Figure 9. An excerpt of the Primary 3 focus group discussion

P4 was able to explain why they felt the lesson was interesting (Figure 10).

T2 What did you think of the Maths lesson ... that you had? ... Anyone can answer. What did you think of the Maths lesson that you had?

P3 It was fun.

T2 OK, what about it was fun?

P4 On the times when (the teacher) joked about the shapes and ... it's kind of interesting. He joked about the shapes and he could differentiate, tell us that this shape could be that shape and that one can be the same as that shape, but some have the same properties but some doesn't have it. So it's like for us, more knowledge.

Figure 10. An excerpt of the Primary 5 focus group discussion

Teacher Observer Reflections

The reflections below were written by the teacher observers who were also the researchers on this project.

P3 English Lesson

The pupils in the P3 English class were attentive at the beginning of the lesson, with one exception. (The student was later understood to have a learning difficulty.) However, as the lesson progressed, more pupils started to become inattentive, only following the lesson when the teacher was reading out the chunk and not when it came to question and answer time.

Although the majority (20 out of the 32) were still listening to the lesson, active participation was limited to eight pupils. All the questions were answered by this group of pupils. The rest listened passively.

During the lesson, the teacher pointed out parts of the text to guide pupils towards important information and help them connect the text to the questions. There were a number of good, logical answers to direct questions on the text content, but the pupils were not able to evaluate who gained or lost in the situation described in the text.

P5 English Lesson

The P5 English class was generally engaged during the lesson as the chunking went on. It was wise to present the text in chunks using PowerPoint slides because it prevented the pupils from reading beyond the given chunks. As the teacher engaged the pupils with the CQs, the pupils could be seen thinking and rich discussion ensued.

The CQs were very intriguing and an entire lesson could have been based on them, but alas, due to time constraints, much of the discussion and thought processing of the pupils had to be cut short. The end of the text was shocking to most pupils as there was no conclusion. They seemed restless and needed an ending.

P3 Mathematics Class

The class started with a quick recap of what 'area' and 'perimeter' were. Then activity sheets were given out. While the teacher was giving instructions, about four to six pupils were not paying attention as they were still writing their names.

For the first task, the pupils were given a figure with a perimeter of 16 cm. The figure was printed on a square grid. The pupils were to draw a figure with the same perimeter but with a different area. Most pupils did not seem to understand what they were supposed to do, resulting in their activity sheets remaining blank or showing a copy of the original figure. There was also little discussion, and most pupils went about the task independently.

The presence of an iPad on the table proved a distraction for the pupils. Many fiddled with the iPad instead of focusing on the lesson. Using the video function to record the groups' discussions may not be a good idea because it proved too much of a temptation for the pupils.

P5 Mathematics Class

Though CQs were being asked, the pupils were not given the opportunity to evaluate and discuss and come up with explanations. The teacher went on to do the explanations instead. The use of rods helped the pupils to visualise the shapes. Little time was left for group discussion for the pupils to purposefully talk.

Discussion

Through this study, it was clear that planning and asking critical questions in class to stimulate classroom talk was important in helping the pupils with their metacognition. This was crucial in both the English and Mathematics classes. The quality of the talk when controlled by the teacher was good as the teacher steered the conversations and rephrased the ideas that the pupils shared.

However, the quality of talk that was produced in group discussions was poor. The pupils were aware that they needed to complete the assignment through effective discussions, but they were not sure of how to go about doing it academically. This raised two questions:

- How then do we help pupils to bridge these gaps?
- What platforms and scaffolds do we need to provide so that the pupils are able to have a fruitful academic talk?

The engagement of the pupils, as measured using the Engagement Checklist, showed us that the majority of the pupils were engaged. However, those answering the questions were a handful of pupils and this was especially prominent in the low progress Primary 3 class.

The researchers both felt that the validity of the comprehension tests could be improved significantly. If they had such lessons on a bi-weekly basis, they could have the post-test after five of such lessons. In this post-test, there would be a brand new text instead of the practice in this study in which a well-discussed text was used. When a brand new text is used, if the pupils are able to produce better results, it would mean that they have become more proficient in thinking critically about their answers to the comprehension questions.

Conclusion

In conclusion, this study has given clarity to how a lesson could be run using critical questions. The results are satisfactory but more could be done to promote classroom talk. The study shows the benefit in having effective classroom talk as there is greater engagement from the pupils and they produce better written work.

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Appendix A

Engagement Checklists

Frontal Teaching

No.	Observable Traits	More than half of the pupils	Half of the pupils	Less than half of the pupils
1	Pupils have a good sitting posture, straight up.			
2	Pupils have good eye contact with the teacher/ other pupils sharing.			
3	Pupils volunteer to answer the questions.			
4	Pupils are seen to nod when listening.			
5	Pupils are distracted by other materials/ conversations.			

Discussion

No.	Observable Traits	More than half of the pupils	Half of the pupils	Less than half of the pupils
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3	Pupils volunteer to share their ideas.			
4	Pupils are seen to nod when listening.			
5	Pupils are distracted by other materials/ conversations.			

Appendix B

Teacher Observer Reflection Questions

Lesson Observed:

Reflection Questions (As an Observer)

1. How do the normal types of questions affect the quality of responses?
2. How do the critical questions affect the quality of responses?
3. Were the learning outcomes achieved?
4. What else strikes you in your observation?
5. What were the limitations?

Appendix C

Focus Group Discussion Questions

English

1. What do you think of the EL lesson the day before?
2. What do you think about the text?
3. Do you think that after the discussion, you would have understood the text better?
4. What if the teacher does not discuss the text, how much would you understand the text?
(fractions, scale)
5. Do you enjoy the lesson?
6. Would you use the technique shared?
7. Do you think the class is engaged? Do they seem to be having a good time?

Mathematics

1. What do you think of the Math lesson the day before?
2. What do you think about the question asked?
3. Do you understand area and perimeter or are you confused?
4. How do you feel when doing the group discussion?
5. Did you know what to do or were you lost and confused?
6. How do you feel when you shared your answer with the rest of the class?
7. Were you able to complete the question on your own later on?