Use of Dialogic Teaching to Enhance Inferential Skills in Reading

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Abstract

Our quest to enhance talk among students led us to explore dialogic teaching – a tool which provided opportunities for dialogic interactions to take place. Dialogic refers to conveying the meaning of the content, building on the views of others, clarifying by seeking information through questioning, summarising information, giving reasons to support one's views and listening actively and responding appropriately to other individuals. Students' discussions surface authentic exchanges which are both exploratory and collaborative. Hence, we believe that classroom discourse, though guided, should be a comfortable and natural exchange of views. Theories of dialogic teaching further support the need for authentic classroom talk. In our study, two groups of high to low progress Primary 3 pupils (n=58) were exposed to three abstract themes based on a series of visual stimuli and text from the picture book, Piggybook by Anthony Browne (1986). Their responses were analysed qualitatively and categorised into the various specific learning objectives found in Learning Outcome 2 for the teaching of Reading and Viewing as spelt out in the Singapore English Language Syllabus 2010 (Curriculum Planning and Development Division, 2008). The pupils' written and verbal responses were recorded during discussions about the interactive visual texts. The study found that dialogic teaching leads to responses that include pupils constructing their own metaphors and inferences.

Introduction

The Singapore Primary English Syllabus Learning Outcome 2 (LO2), under the reading and viewing section in the *Singapore English Language Syllabus 2010* (Curriculum Planning and Development Division, 2008), aims to develop reading and viewing skills, attitudes and behaviour by pupils processing and comprehending level appropriate texts at literal and inferential levels. However, pupils in Singapore are often believed to give binary responses or 'perfect' responses lifted from textbooks to texts and visuals (Hwee, 2017). In today's context, jobs are constantly evolving, and there is a gap between skills achieved in schools and the skills that are needed for the real world (Seow, 2018). This pilot study examines if dialogic teaching improves reading and viewing skills (LO2).

Literature Review

Social constructivism in cognitive development

The classroom is a context in which talk is not simply a product of learning activities, but one in which talk is an important process in supporting learning. Talk is one of the means from which a child constructs a way of thinking (Edwards & Mercer, 1987). Vygotsky (1978) argued that the acquisition and use of language transform children's thinking. He described language as both a cultural tool (for the development and sharing of knowledge amongst members of a community or society) and as a psychological tool (for structuring the processes and content of individual thought). The process of verbalising gives substance to thinking. Vygotsky (1978) argued that 'human learning presupposes a specific social nature and a process by which children grow into the intellectual life of those around them' (p. 88). A child's cognitive development improves when engaged in the zone of proximal development (ZPD), i.e. with the support of a teacher (Vygotsky, 1978). Through talking in particular, we can formulate and reformulate our ideas so that our thinking and understanding are clarified, focused or modified. By learning to use talk in the classroom, children can argue and construct better reasoning, deduction, and complete inferential tasks in a way that is better than any of them would have done individually (Mercer, 2013). Mercer (2013) also explained that the experience of group discussion allows reasoning, and thus inferencing, to be made explicit. This allows the argumentation process in problem solving to promote children's awareness of how they might practise these skills by themselves.

Dialogic teaching

Combining both verbalization and the concept of the zone of proximal development, dialogic teaching is distinctive in its principles, focus and strategy, as defined by Alexander (2017), while being grounded in the wider corpus of research on talk in learning and teaching. Dialogic teaching harnesses the power of talk to engage children, stimulate and extend their thinking, and advance learning and understanding (Alexander, 2017). This form of teaching is distinct from the question-answer-tell routines of so-called 'interactive' teaching, aiming to be more consistently searching and more genuinely reciprocal and cumulative (Alexander, 2017). Dialogic teaching enables the teacher to diagnose, assess and give feedback to pupils.

The dialogic repertoire

As part of a comprehensive classroom approach to talk for learning and empowerment, teachers need to engage with different repertoires, as in the following examples: teacher-pupil interaction, questioning, responses to questioning, feedback on responses, pupil talk (Alexander, 2017). Furthermore, with regard to the mentioned repertoires, Vaish (2008) argued for classroom interventions that focused on changing the questioning patterns of teachers to include more open-ended questions, and that encouraged extended oral responses from students through activities like student demonstrations as opposed to teacher-led whole class activities. Professional learning activities sensitised teachers to the use of authentic questions which signal (dialogically) to students their teachers' interest in what they think and have to say. Such authentic questions include requests for information as well as open-ended questions with indeterminate answers. To open up talk in the classroom, teachers use students' responses to ask a further question and give feedback and not to evaluate students' responses (Vaish, 2008).

Aim of research

This paper seeks to examine how the use of dialogic teaching can engage, stimulate and extend students' learning and understanding.

To guide the study, the following questions were crafted:

1. How does dialogic teaching engage and stimulate students in a variety of spoken and written responses?
2. How does dialogic teaching support student learning and understanding of visual texts?

Methodology

For this study, two classes of Primary 3 (P3) students in our school were selected. We targeted the middle primary owing to the fact that, at that level, they had sufficient language competency to hold a conversation about the elements in a storybook. We also considered the ability level of the cohort based on their academic grades achieved in the previous year (Primary 2). Thus, part of the reason for selecting this group was that a significant proportion of the students had learning gaps in reading and understanding English, and therefore the study would possibly serve as a potential solution to that.

Using methods of lesson design and planning that consciously took into account the predicted interest and readiness levels of the students, three lessons were conducted and data was subsequently gathered in two forms:

1. Audio and video recordings were made of teacher-student talk and questioning.
2. Written responses from the students to the interactive visual text were analysed.

The recordings were transcribed prior to analysis. From the transcripts of lesson recordings and the written responses, we classified student responses into four broad categories as addressed by questions asked both verbally by the teacher and in writing on the activity sheet. The questions were planned beforehand, included in the lesson plan and activity sheet, and designed to elicit target responses in four areas, as follows:

1. Author's intended meaning
2. Visual elements
3. Metaphorical language use – creative language use by students
4. Attitudes: Learner's anticipation and excitement

The analysis of the lesson transcripts was conducted using these four categories.

We attempted to review the lesson design for the subsequent lesson in the unit, with a focus on dialogic teaching, impact on student thinking and student motivation.

The responses were then graded through the use of rubrics into the following levels:

Grade 1: Pupil does not have a grasp of information and cannot answer questions about subject.

Grade 2: Pupil is uncomfortable with information and is able to answer only basic questions.

Grade 3: Pupil is able to give expected answers to all questions, without elaboration on their opinions.

Grade 4: Pupil demonstrates full knowledge by answering all class questions with

explanations and elaboration on their opinions.

The lessons were designed extensively beforehand, with the priorities of increasing the interest levels of the students, as well as differentiating the lessons to match the reading and response readiness of students. Initiating a two-way conversation by using dialogic teaching was a main focus during lesson planning; questions were open-ended and covered a wide range of possible personal opinions or experiences (as opposed to having "correct" answers). Examples of the questions are given below:

Lesson 1:

As we read further into the book, would you expect Mr Piggott and his children to treat Mother well, or poorly? What makes you say that?

Lesson 2:

Why do you think the illustrator used these images?

During the course of the study, teachers actively reviewed the lessons for areas of improvement and made edits in preparation for subsequent lessons.

Storybook

Each of the three lessons was to be based on the book *Piggybook* by [Anthony Browne (1986)](). *Piggybook* was chosen for a few reasons: it was well-pitched at the P3 level for reading and comprehension (considering the readers' level and the writing style of the author in the book), the visuals were meaningful and had potential as a trigger for spoken discourse, and the content was remarkably novel for readers of that age (dealing with family dynamics). All these points catered towards the interest and readiness level of the target students.

Initially, other books by Anthony Browne, such as *Gorilla*, were also considered but we decided on *Piggybook* due to its family-centric content and how that could be tapped on to engage in deep and meaningful conversations with the students.

Lesson Plan

The lessons were designed with the objective of engaging students through dialogic teaching about various interesting aspects of the storybook. Each of the three lessons was based on a theme which was significant and recurrent in the book.

Lesson 1: Family

Lesson 2: Motifs

Lesson 3: Reality

With these themes in mind, the lesson plans then focused on designing questions that would stimulate students to form ideas about the story, link them with their personal experiences and thus allow them to engage in meaningful teacher-student conversation. Further discussion and refinement of the lesson progression took place between lessons.

Interactive visual text

This interactive visual text (Browne, 1986) was designed for the purpose of encouraging student responses. The book uses visual cues (e.g. motifs) to lead readers towards certain outcomes or messages and tries to 'speak out' to its reader according to how the reader interprets these cues.

It is a good example of an interactive text. This text was thus selected to facilitate dialogic teaching. Encouraged to write down their thoughts about the visual text, symbols and motifs used in the selected text, the students were able to concretize their thoughts and make their thinking more visible to themselves. As teachers, we were able to observe the visible (and audible) thinking of the students through not just reading their written responses, but also by listening to their oral responses, responding to them, and interacting with them through the context of the story.

The text was designed to be 'attractive' to the students; the idea was to encourage the students to enjoy using the interactive visual text, as opposed to treating it as just another worksheet to fill in the blanks. Each page was carefully designed to look like the 'interface' of a webpage, with visual elements (Unsworth, 2001) placed around the pages instead of the usual top-down approach of standard worksheets. Key questions were used to trigger students to think about the story, themes and visuals. Three lesson plans were designed. For some questions, boxes with instructions to draw or write were also added instead of lines to allow students to draw as an alternative to writing. This shifted away from a linear approach to reading and viewing.

Findings and Discussion

Qualitative analysis of spoken responses

The analysis of spoken responses will be organised using the four topics of teacher questioning.

1. Author's intended meaning

In many spoken responses, learners were intrigued to find the transition from reality to fiction. They started to form arguments and inferences regarding the author's intention, linking their arguments to the visual stimuli and cues. By linking their arguments, the students were engaged and stimulated to give personal opinions on the author's intentions of using different literary features in the story, like motifs (Figure 1):

T: Why do you think the author **transited from flower motifs to pig motifs**?

S: Because the **father and the children were lazy then the mother was the only one cleaning the house. When the mother left the house, they started trying to clean, but then they messed up. Then when the mother came back, the mother teach them how to clean, then when they clean up all those mess, the pigs in the wall became flowers**.

Figure 1: Teacher-student exchanges around the topic of the author's intended meaning.

2. Visual Elements

In Anthony Browne's *Piggybook*, the framing of images is a very active feature. The visual elements on the cover illustrate the four characters gazing out at the viewer inviting them into their story in a visual demand. For example, the way the characters are positioned off centre and have turned their heads to face the viewer engages the viewer rather than confronting them. The cover illustration summarises the family situation by showing the character of Mrs Piggott piggybacking the rest of the family, symbolizing the way she shoulders the burdens and needs of the family.

The use of framing allowed the students to interpret and give personal responses to the author's intended meanings. It stimulated the students' thinking and promoted talk in the classroom. Articulating ideas is a very important part of developing understanding (Alexander, 2017). Therefore, by developing understanding, the students were able to give more varied responses

(Figure 2).

Anthony Browne's visuals give richness and depth to his stories with the layered visuals of *Piggybook* being an example. The visuals provided opportunities for extended talk among students around the images of the change in the patterns of motifs. This offered the potential to expand the young readers' interpretive reading practices (Unsworth, 2001, p. 174), helping the students to increase the variety in their responses (Figure 2).

T:	Why did the author use motifs?
S1:	To indicate a **change in the content** of the story.
S2:	He is trying to describe the boys and Mr Piggott, so he had drew lots of pigs in the background and named the men and boys Mr Piggott. And **even the name is part of the pattern** right, in word form.
S3:	Okay, the author used motifs in his story, so he wanted to **describe little piglets as boys** because they are lazy.

Figure 2: Teacher-student exchanges around the topic of visual elements.

3. Metaphorical Language Use

As the story progresses in Anthony Browne's *Piggyback*, we read that the mother is unhappy that the family has taken her for granted, so she disappears from the house. All the male characters in the story then start to morph into pigs, metaphorically, in their actions, and visibly, in the visuals. This literary technique of personification reduces the stark reality of the social issue while remaining relevant to students in a comical, childlike manner. The students started to be very curious and to want to read and find out more from the pictures. The teachers could also encourage students to move beyond conventional metaphors and be creative (Figure 3).

T:	Okay? So, this one over here, this part here, describe your parents using pictures, right? So, can I get you to create your own pattern, describe about your parents. So, if they are hardworking, how would you describe them?
S1:	**As smart as a deer.**
S2:	**As hardworking as a bee.**
S3:	**As wise as a cat.**

Figure 3: Teacher-student exchanges around the topic of metaphorical language use.

There is visual symbolic and related metaphorical meaning-making in images. 'While all images construct representational meanings they also simultaneously construct interactive meanings' (Unsworth, 2001, p. 166). Interactive meanings concern the ways in which the viewer is positioned interpersonally in relation to the image. Students learn to understand and use various forms of grammar such as metaphors and similes meaningfully from the visual images. Therefore, the use of interactive teaching supported the students' learning of metaphorical language.

4. Attitudes

Learners were also very interested to know what would happen next in the book. They started making predictions and airing their views during the lessons.

Our students' interest and motivation in learning increased when they explored meaning-making in children's texts. There was much excitement and anticipation among students when engaged in the visual construction of actions, and of the interactive relationships between the images and viewers (Unsworth, 2001). The sample of spoken responses (Figure 4 below) summarises how dialogic teaching was impactful in engaging students to respond in a variety of ways.

T:	How do you feel about the book so far?
S1:	I **feel very curious, curious**, because there are certain secrets inside the book, like a lot of those, so I need to keep reading the book, like more than twice.
S2:	Children **can have fun** finding pictures in picture books.
S3:	This is like **finding Wally**!
T:	Where can you find motifs around you today?
S:	Switch, switch, switch, eleven, eleven, eleven, the bus, the bus, twelve, thirteen, the picture, the small picture, fifteen, sixteen. [inaudible][**Students were excited and shouting different answers**]. The bus, the bus.

Figure 4: Teacher-student exchanges around the topic of attitudes.

The qualitative analysis of samples of students' spoken responses supports the hypothesis that dialogic teaching can improve student engagement with the text and build richness in students' responses to the text. In addition, this pedagogy supported their learning of metaphorical language and symbolism. To build a clear pattern that student engagement increased as a result of dialogic teaching, written responses to the interactive text were analysed quantitatively using a rubric.

Quantitative analysis of written responses

The following shows how student performance in class was graded to show an increase in the depth of responses. This corresponds to the research question regarding increasing the student learning and understanding of visual texts. To examine the data across themes, the following rubric was used to examine the written responses.

1-Beginning	2-Developing	3-Competent	4-Accomplished
Pupil does not have grasp of information and cannot answer questions about subject.	Pupil is uncomfortable with information and is able to give simple one-word answers to questions.	Pupil is able to give answers to all questions, without elaboration.	Pupil demonstrates full knowledge by answering all class questions with explanations and elaboration.

Across the year that the research was conducted, the students' written responses were categorised and analysed based on the different grades shown in the rubric and projected across different lessons (Figure 5.)
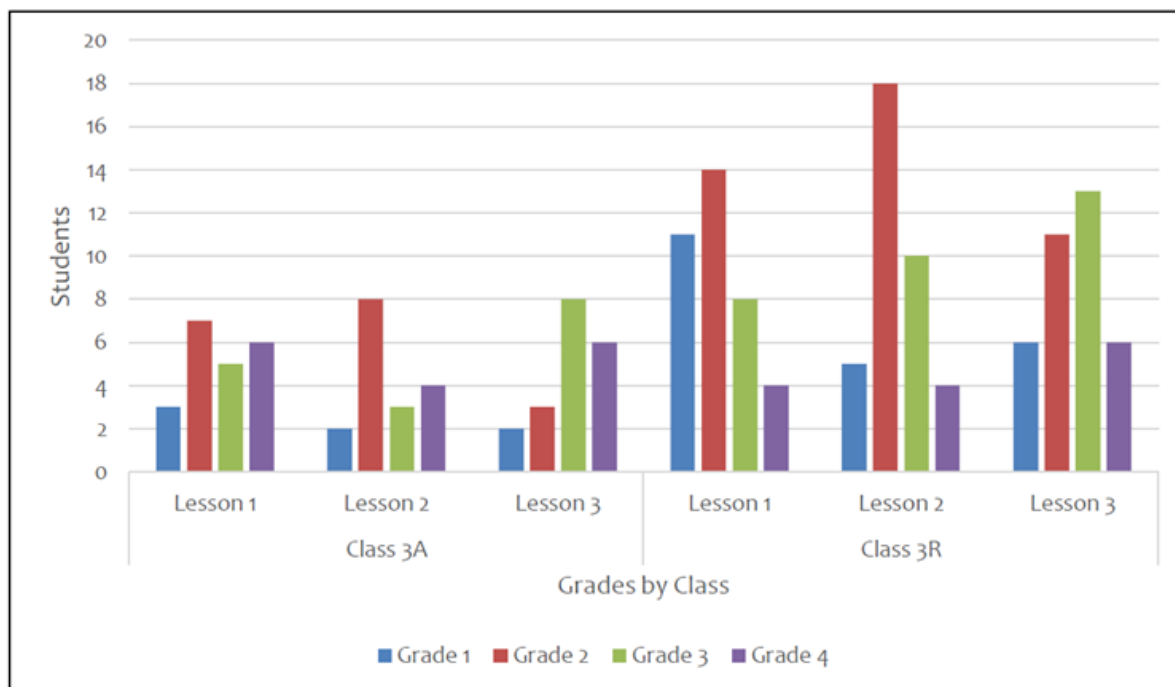

Figure 5: The grade distribution across three lessons by the two classes. (The total number of students varied slightly from lesson to lesson, especially in Class 3A, due to absenteeism. Full figures are given in the Appendix.)

Based on the data, there was a general improvement in responses over three lessons and across both classes (3A and 3R). In the graph above (Figure 5), the written response quality increased from Grades 1 to 4 over time. Over three lessons, responses receiving a Grade 1 and 2 reduced progressively. The quantitative analysis showing a progressive improvement in the depth of responses is consistent across both classes. From the above results, dialogic teaching appears to have increased the quality of students' responses.

Overview of Data Analyses

Combining both quantitative and qualitative analyses, it can be seen consistently that dialogic teaching appears to have improved the students' quality in written and spoken responses to an interactive visual text over time. While the spoken responses show that the students were engaged and motivated, the written responses show that engagement with the visual interactive text was enhanced and inferential skills were improved through the use of dialogic teaching over the course of the three lessons.

Limitations

The results of this study cannot be generalised to the entire school student population or to other contexts. The current study was conducted within a mixed gender neighbourhood school with a majority of the students coming from non-English speaking backgrounds. We would like to extend the study to other teachers for follow up.

Conclusion

Using dialogic teaching, our team sought to move from teacher talk to a teacher-facilitated dialogue with the students. The dialogue between the teacher and the students has been shown to be a factor in facilitating the student learning and understanding of visual texts. From our students' responses and interactions with the selected text, we discovered a strong relationship between visual and verbal representation.

The questions that were used in teaching were able to spark conversations between students and teachers, generating responses that reflected the students' higher levels of understanding of the story that we did not originally expect. The responses from the four topics covered in teacher questioning showed higher levels of understanding of and inference from the text than we usually saw in the conventional lessons taught previously. The lessons facilitated the demonstration of the students' inference skills and responsiveness, and also helped the students to hone the same skill sets and enhance their command of the English language as a whole.

Outcomes

The team would like to recommend including and using children's literature books with a strong visual literacy approach (Unsworth, 2001) to promote dialogic teaching that will engage, stimulate and extend students' learning and understanding.

The teachers participating in the study provided feedback that enabled them to reflect on the different conversations, responses and thinking of the students when they reviewed, designed and refined the lesson plans and interactive activities for the different stages of the dialogic teaching process.

Through designing the lessons, the teachers learnt that every process in the lesson planning, from the choice of book to the design of stimulating questions, impact the effectiveness of student learning. Visual texts should be selected not just for the suitability of the reader, but also the level of appeal to the students to generate interest and provoke discourse. Therefore, understanding the profile of the students in class is critical to engaging them for effective teaching and learning.

Acknowledgments

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Appendix – Distribution of Grades for Written Responses

Rubrics adapted from:
http://www.readwritethink.org/files/resources/lesson_images/lesson416/OralRubric.pdf

	Grade Distribution			
Grade	1	2	3	4
	Pupil does not have grasp of information and cannot answer questions about subject.	Pupil is uncomfortable with information and is able to give simple one-word answers to questions.	Pupil is able to give answers to all questions, without elaboration.	Pupil demonstrates full knowledge by answering all class questions with explanations and elaboration.
Class	3A (Total varies: Lesson 1: 21, Lesson 2: 17, Lesson 3: 19)			
Lesson 1	3	7	5	6
Lesson 2	2	8	3	4
Lesson 3	2	3	8	6
Class	3R (Total varies: Lesson 1: 37, Lesson 2: 37, Lesson 3: 36)			
Lesson 1	11	14	8	4
Lesson 2	5	18	10	4
Lesson 3	6	11	13	6