

Questions in Teacher Talk: What Questions are Frequent and how it Affects Critical Thinking

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Abstract. This study aims to identify the occurrence of the different types of questions an elementary teacher raises in delivering reading instruction and give implications in teaching and learning. The objective is to find out the frequent type of question/s being raised in the elementary classroom in order to identify its effects on the learners' critical thinking and eventually help improve teachers' questioning skills. This research focuses on the analysis of questions in teacher talk and suggests ways for pedagogical improvement. Findings show that factual questions appear as the most frequent in teacher's questions which denotes its significance in establishing a foundation that revolves on mastery of the content. With its successful training, students will be able to justify their claims when asked empirical questions as well as apply and relate the concepts in their everyday life to make meaning with that they are learning.

Keywords: Teacher Talk, Classroom Discourse, Critical Thinking, Teacher Questions

1. Introduction

Alvin Toffler once said "The illiterate of the 21st century will not be those who cannot read and write, but those who cannot learn, unlearn and relearn". According to Lai (2011), the Partnership for 21st Century Skills has identified critical thinking as "one of several learning and innovation skills necessary to prepare students for post – secondary education and the workforce" (p. 4). Furthermore, the newly created standards released by the Department of Education (DepEd) reflect critical thinking as a cross – disciplinary skill vital for college and employment. With the fast – paced trends in education as well as changes among learners' interests, institutions try its best to gradually adapt to these changes to be able to address the current needs of their diverse learners. Such hypothesis resulted to a substantial shift that our institution, De La Salle Zobel School, made in terms of training our students how to think critically and reason out substantially to effectively make sense of what they are learning.

Also, such premise enables us to aim on how we can help our students construct their own understanding of key concepts by teaching for understanding which require questions that elicit answers using both lower – and higher – order thinking skills. Gunning (1996) explains that lower order thinking skills require students to memorize or recall facts and higher order thinking skills enables them to construct meaning by combining facts, drawing conclusions, explaining or hypothesizing (p. 279). Furthermore, the assertion of teaching for understanding can be reflected in classroom teaching and learning because majority of classroom interaction revolves on the questions that teachers raise which may require students to spontaneously answer. Thus, makes classroom discourse a significant part in the process. Research suggests that the quality of classroom discourse is important mainly because it "sets a suitable climate for learning and transmitting teachers' expectations for their pupils' thinking" (Zhang, 2008 in Nystrand, 1997, p. 80). However, some students fail to appreciate the relevance of oral expression of thoughts and ideas because much attention is given to their written output or products that would not really require them to orally express themselves. Thus, the questions that teachers raise seem irrelevant because students do not really respond to help them think about their learning; rather they perceive it as an obligation because they are required to respond inside the classroom (Alexander, 2004 in Zhang, 2008 p. 80). Hence, to address the gap of whether teacher questions help stimulate students' thinking, the researcher will identify, describe and analyze the questions that an

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elementary teacher raises in the classroom. As such, the paper aims to answer the following research questions:

- What is the frequency of the occurrence of different types of questions in the discourse of an elementary teacher talk?
- What are the implications of the result in teaching and learning?

2. Teacher Talk

Teacher talk is obviously prevalent in classroom discourse. It is a fact that teacher talk dominates any classroom because these words have potential to affect significant change in students' learning specifically on how teachers reiterate what is valued in learning and influences a child's perception of themselves (Johnston, 2004 in Robertson, 2012, p. 21). According to Cullen (1998 in Farahian & Rezaee, 2012), teacher talk plays a crucial role in language learning because "teachers serve as the superior in the classroom who control topics of discourse and provide the live target input the students are likely to receive" (p. 161). However, Nasir and Abdul Majid Khan (2006 in Faruji, 2011) describes the present day classroom as "student – oriented, activity – based and demanding" in practice which then requires a teacher to be "more responsive, spontaneous and critical" to address the diverse needs of all learners. Even if teachers have the authority to control the discussion, it is imperative that they can instill learning and comprehension among learners who seem to experience consistent difficulties across content areas as well as cope with students who are more exposed to a wide variety of information and regarded as creative thinkers.

According to Wells (1999), talk as the medium of classroom learning/teaching opens a wide array of opportunities for learners to engage in collaborative work (in Zhang, 2008, p. 80). Furthermore, Gee (2001) emphasizes that this verbal communication between the teacher and students shapes the learning environment by influencing the type of talk that students engage in during instruction (in Smart et., al, 2012, p. 2). Thus, maximizes learner involvement and guides students to make meaning of what is presented to them. Moreover, talk in the classroom may be controlled by the teacher because he has control over what methodologies will be important to increase learner potential. Hence, teacher talk may vary from direct error correction, content feedback, checking for confirmation, extended wait time, scaffolding or questioning (Faruji, 2011, p. 1821).

Several researchers explored on teacher talks to identify its effective characteristics specifically in terms of reading achievement. Frey and Fisher (2010) examined the instructional moves made by teachers during small – group guided instruction. Another study on teacher talk was identified employing the use of transcripts on Reading recovery, a strategy that advances achievement primary – aged children (Clay, 1982, 1991, 1993; Lyons, et. al., 1993 in Robertson, 2012, p. 22). Lastly, Palinscar (1986) conducted an experimental study and examined transcripts of lessons that led to increase strategy use on transfer measures for a group of 1st graders in a reciprocal teaching classroom compared to peers in the control group (in Robertson, 2012, p. 22).

To sum it up, the studies reveal that the characteristics of effective teacher talk during instruction are: 1) Teachers spoke explicitly. They state lesson objectives, explain strategy knowledge, and do modeling and prompting for strategy in use; 2) Teachers spoke in response to student statements and strategy use by linking student thinking to new knowledge and explicitly reinforcing and evaluating their strategy attempt; lastly, teachers engaged students in practice that focused at the idea – level more than word – or letter level to facilitate construction of knowledge (Robertson, 2012, p. 24).

3. Teacher Questions

Teacher instructional practices influence student learning in various ways. Most student outcomes such as motivation, achievement and efficacy have been associated with the instructional practices that teachers materialize in the classroom (den Brok et al. 2005; Pianta 1999 in Smart et. al, 2012 p. 2). Specifically, these "interactions between students and teachers have the potential to shape the course of student learning" (Van den Oord and Rossem, 2002 in Smart et. al, 2012) because the teacher facilitates effective instruction by providing a "forum for the development of conceptual understanding" (Mortimer and Scott, 2003; Chin, 2007 in Smart et. al, 2012). In particular, teacher questions are given the crucial role of facilitating the

effective discourse in the classroom, especially in the area of “supporting students’ cognitive engagement” (Chin, 2006; Chapin and Anderson, 2003; Morge, 2005; Dantonio and Paradise, 1988 in Smart et. al, 2012).

Previous studies have confirmed that critical thinking using teacher questions enable learners to answer questions that will help them develop a thorough and profound understanding of the issues they are experiencing in society (Facione, 1998 in Visser, et. al., 2004, p. 401). As such, this manifestation characterizes teacher questions as something that is “flexible” because such questions are adjusted based on students’ responses in order to engage in higher – order thinking (Chin, 2007 in Smart et. al. 2012, p. 3). Furthermore, teacher questions scaffold student understanding by progressing from lower order to higher order questioning. This is exemplified when teachers introduce new concepts wherein they raise questions that will entail the student to recall as part of building the foundation. However, when the discussion progresses and students have shown mastery of the topic, teachers may give questions that will require students to elaborate or explain their answers and justify their claims (Morge, 2005 in Smart et. al, 2012, p. 3).

Studies focusing on teacher questions mainly developed different classifications which teachers may simultaneously choose from to help build foundation of background knowledge among students and eventually hone them to be critical thinkers. Long and Sato (1983, in Fajuri, 2011) identified two types of questions that may be asked by teachers in their classrooms: display questions and referential questions (p. 1821). As cited in Inan et.al (2013), Nystran & Gamoran (1997) classified teacher questions into authentic questions and test questions. Celce – Murcia & Larsen – Freeman (1999) and Biber et. al.(1999) proposed form – based questions such as yes/no questions, wh – questions, tag questions and alternative questions (in Inan et. al, 2013, p. 1071). Chinn et. al., (2001)’s classification of questions include assessment questions, genuine information questions, open – ended questions, and challenge questions (p. 1071). Laslty, Barnes (1969, 1976) identified four types of questions, namely factual questions, reasoning questions, open questions and social questions (p. 1071).

4. Method

4.1. Participant

The participant was a Grade six Reading teacher from De La Salle Zobel School who is teaching for 14 years in the said institution. She graduated with a degree in Communication Arts at Pamantasan ng Lungsod ng Maynila (PLM) and attained her Master’s Degree in Teaching Reading from the same institution.

4.2. Instrument

The data were collected through audio recording of three different sixth grade reading classes composed of 35 to 40 students.

4.3. Data Gathering Procedure

The researcher sought permission from the teacher whose class will be audio - taped. Upon getting the approval from the teacher, a letter was written addressed to the grade school principal. This is to seek the permission to audio record three sessions from one selected class and to ensure that the data will solely be used for the purpose of the study being conducted.

Once the approval has been given, the researcher made a formal written request to the teacher. The researcher then started to audio record three non – consecutive reading sessions from three reading classes.

The recorded data were transcribed and coded for the purpose of data analysis. Factual questions were coded as 1; empirical questions as 2; productive questions as 3 and evaluative questions as 4. The remaining questions appear to fall under the yes/no category.

4.4. Data Analysis

The data were analyzed by considering one utterance as basic unit of count. Nasir and Khan (2006) defined an utterance unit as “a complete meaningful segment of conversation dealing with single continuous idea” (in Faruji, 2011). One word or one small utterance can be considered as the unit of analysis. The utterance unit is more suitable for this study because Nasir and Khan (2006) justifies that the “new

constructivist focus is on the content of teacher talk rather than the quantity of talk.” They observed during their data analysis that sometimes a long sentence does not convey the meaning, which a single word can.

The analysis of teacher questions was made by using the categories suggested by Moore (2001, as cited in Fajuri, 2011). He suggested four types of questions based on Bloom’s taxonomy namely; factual, empirical, productive and evaluative. The description of question types by level is summarized in Table 1.

Table 1: Description of question types

| Category | Bloom’s Taxonomy | Type of Thinking | Examples |
|------------|----------------------------|---|---|
| Factual | Knowledge or Comprehension | Student simply recall information | Define... Who was...? What did the text say....? |
| Empirical | Application of Analysis | Student integrates and analyzes given or recalled information | Compare... Explain in your own words... Calculate the... |
| Productive | Synthesis | Students think creatively and imaginatively and produces something unique | What will life be like...? What’s good name for...? How could we...? |
| Evaluative | Evaluation | Students make judgment or express value | Which method is most suitable? Why do you favor...? Who is the best...? |

5. Results and Discussion

Literature reviews emphasized that teaching students to be critical thinkers do not happen in an instant. Teachers rigorously take much time to plan their lessons and eventually carry it out in the classroom with the aid of various instructional practices, the most common of which, is teacher questioning.

This study aims to describe which of these teacher questions (Moore, 2001) appear most frequent in the teacher’s delivery of instruction. Table 2 presents the frequency of the occurrence of each teacher question as suggested by Moore (2001).

Table 2: Frequency of the occurrence of teacher questions

| | Factual | Empirical | Productive | Evaluative | Yes/No | Total |
|----------------|---------|-----------|------------|------------|--------|-------|
| Number | 72 | 48 | 13 | 21 | 36 | 182 |
| Percent | 37.89% | 25.26% | 6.84% | 11.05% | 18.95% | 100% |

Results show that factual questions dominated the questions that the teacher used in the classroom as it comprises 37.89% of the 190 questions raised. It is expected that it seems inevitable to go away with asking these questions which stimulates the students to recall because the answers to these questions will surely back up students’ generalization when the teacher leads them to higher – order thinking. However, giving such questions frequently may influence the students to elicit answers which are readily available to them. Thus, may find it exhausting to “extend their thinking and encourage them to increase their contributions” (Menegale, 2008 in Farahian et. al, 2012, p. 167).

It is interesting to note that these factual questions used by the teacher appeared during two instances namely: 1) at the onset of the session like [1] *“Would you remember the graphic organizer?”*; [2] *“What did we do last Monday?”* and [3] *“What basically is the game about?”* and 2) comprehension check during instruction like [1] *“What do we mean by underwater?”* and [2] *“What synonym will you replace nice?”* This progression of factual questions in each session shows that the teacher asks questions to require students to recall the previous lesson to be able to link their current lesson and be able to summarize what had transpired for the day.

Findings of numerous studies reveal that classroom discussions revolving mainly on questions that elicit responses that are not verbatim from what was read or said by the teacher is rare to happen (Yang, 2010 in Farahian et. al, 2012, p. 162). This is because reading classes per se may find it essential to draw questions from texts in order to teach the essential skills that students need to learn. This is exemplified by the teacher who made use of a descriptive paragraph to teach the skill on finding the explicit and implicit main idea. Since main idea does not instantly appear when you ask a question, reading materials are necessary and productive questions, which are the least frequently used in the study, may serve as a follow up to check whether students can relate what was read to their personal experiences. Some productive questions that the teacher used are: [1] *What is the purpose of the author for writing an article like this?*; [2] *What can we now conclude about rift volcanoes?* and [3] *What’s the use of having several synonyms and antonyms in reading several paragraphs?* It is worth noting that the teacher prepared the class to arrive at a certain understanding prior to posing these questions that require students to independently and spontaneously answer in order to relate the generalization into their personal lives.

Next to literal questions are the empirical or “comprehension check” questions which are usually being asked after reading a text. These questions go hand in hand with the productive questions which follow up what was just read. These questions expect students to compare and analyze situations from the text or the responses being elicited during the discussion. When the teacher asked *“If someone says that it is a descriptive paragraph describing rift volcanoes and you wrote the north American plate are slowly ripping, are we describing here a rift volcano?”* it gives the students the opportunity to analyze whether the understanding of their classmates are parallel or logical to the original question which is to describe a rift volcano. In this way, learning appears collaborative and inputs are not spoon fed by the teacher and students were gradually trained to be critical thinkers by justifying their claims.

Similarly, evaluative questions like empirical and productive questions, relate to the students personal lives. The teacher demonstrated these questions when she related the lesson on cause and effect to students’ authentic experiences. For example, the questions *“What happens if you are well nourished?”* and *“What are the positive effects after you followed a reminder?”* will not only require students to say answers that are expected to happen, rather will involve themselves because the question used the word “you.” Thus, making meaning with what they are learning is taking place.

Finally, even if Moore (2001) did not include these questions in his framework, it is important to mention that yes/no questions appeared frequent in the teacher’s questions. Specifically, it comprises 18.95% of the questions used. According to Farahian & Rezaee (2012), yes/no questions were mainly used to get feedback from students and make sure they understand what was just taught (p. 163). These included questions such as *“Are we clear?”* and *“Are there any questions?”* Meanwhile, these questions may expect answers that are affirmative because the question is addressed in general to the class and students may have tendencies to feel humiliated when others will find out that the lesson may not appear clear to him. Thus, to avoid such occurrence, everyone would prefer the positive response.

6. Conclusions and Implications

Most educators agree that the skill to think critically is becoming increasingly important as classes become more diverse and global. Furthermore, critical thinking is best taught when teachers give questions that would entail the student to solve problems or discover new information (Acker, 2003).

The findings of the present study reveal that teachers use factual questions most of the time to build foundation of concepts to be mastered prior to addressing the comprehension of the students as well as its

ability to create something and relate it to their personal lives. This implies that the results of the study should be fed back to classroom teaching so that modifications may be done. Menegale (2008) suggests that in constructing the instructional plan, teachers may *allot more opportunities for students to answer questions that “extend their thinking to encourage them to increase contributions”* in the academic engagement. Hence, their feeling of answering as an obligation may be lessened. However, the need for teachers to discern when to employ lower – order thinking or higher – order thinking questions is necessary to avoid frustrations on the part of the child. Moreover, despite the limited duration of the classroom discourse, verbal and non – verbal factors affect a student’s ability to respond to teacher’s questions. As such, teachers need the ability to *draw on communicative moves to discern whether the students need more scaffolding to further prepare them to answer questions that elicits higher order thinking* (McNeil, 2012, p. 403). Finally, the teacher may *provide immediate feedback which will motivate students to participate*. In this way, rather than directly saying that the student response is incorrect or unrelated to the question, teachers may reconstruct the question and raise it to the class for them to think about. In this way, frustration is avoided and more questions to think about will keep the discussion continuous and productive.

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