Teacher questioning in Chinese Language classrooms:
A sociocultural approach[1]

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[**ABSTRACT**] Drawn up the Sociocultural Theory and using classroom data from CRPP's Core Project, this study examines teacher questioning discourse and its effects on student learning in Primary 5 Chinese Language classrooms in Singapore. Integrating quantitative and qualitative approaches, we use the methods of corpus linguistics and discourse analysis to identify the pattern of teacher questioning behavior and the structure and dynamics of discourse underlying how teacher questioning influence student Chinese language learning. We find that teacher questioning discourse in Chinese Language classrooms in Singapore is generally characterized by a monological recitation-based interaction. Teachers, with their tight control of classroom discourse and the predominant focus on textbook knowledge, create little space for students' voices. The monologic discourse constrains students' discursive construction and therefore it is limited in facilitating students' Chinese Language learning. The study also shows that teacher questioning is a complex discourse phenomenon. To understand how teacher questioning influences second language learning, we should pay attention not only to the types of questions teachers ask, but more importantly to the process and discursive context of questioning, including the pedagogic purposes of teacher questions, teachers' elicitation strategies, student response and teacher feedback.

Introduction

The interaction between teacher and students in classroom discourse has been an important area of studies in the field of education in general and second language education in particular (Cazden, 2001; Hall & Walsh, 2004; Johnson, 1995; Mehan, 1979). Among the variety of studies on teacher-student interaction in second language classrooms, one area that has received much attention in the past decade is teacher questioning, one of the important discourse strategies used by teachers in classroom pedagogy (Chaudron, 1988; Ellis, 1994). Research has examined from different perspectives how teacher's questions can contribute to students' second language development (Ellis, 1994; Long & Sato, 1983). A majority of these studies focus particularly on the effects of different types of teacher question, especially referential question and display question, in eliciting output from

students (Brock, 1986; Tsui, 1995; White & Lightbown, 1986). Based on the Output Hypothesis proposed by Swain, which argues that pushed output from second language learner is conducive to their second language syntactic development (Swain, 1995), these studies show that referential questions contribute more to students' second language development as they tend to elicit longer and grammatically more complex utterances from students. Therefore they suggest more referential questions be asked than display questions (Long & Sato, 1983; Tsui, 1995).

However, these output-based studies, following the psycholinguistic tradition, take language mainly as a system of linguistic forms and focus on the linguistic side of student interlanguage development. They pay little if any attention to the social processes of language use and the discourse dynamics underlying how teacher discourse affects students' second language learning in classroom pedagogic practice (Firth & Wagner, 1997; Hall & Verplaetse, 2000). Therefore, recently in the field of second language education there is a trend of adopting the Vygotskian perspective, which views learning as a dynamic meaning-making process with language as an important mediation tool, for examining classroom interaction and student second language learning (e.g., Donato, 1994; Lantolf, 2000). Following this view of interaction and learning, teacher questioning plays a role beyond the mere elicitation of output for the development of linguistic accuracy. More importantly, the questioning-answering exchanges between teacher and students mediate the process of second language learning where teachers use their questions to scaffold students' second language learning (e.g., McCormick & Donato, 2000). However, such studies as the one done by McCormick and Donato (2000) are limited in that little attention has been given to structure and dynamics of teacher-student interaction, and therefore effects of discourse dynamics on second language learning process are still unknown. Besides, McCormick and Donato's (2000) study, just as the many ones reviewed above, focused on ESL teaching and learning. There are few studies examining the process of teacher questioning and the learning of Chinese Language, a language now widely taught around the world.

Therefore, in this paper, drawn upon the Sociocultural Theory and using the classroom data collected in Singapore, where Chinese is taught as a second language in school education, we examine the pattern of questioning in Chinese Language classrooms and the structure and dynamics of discourse underlying how teacher questioning influences the creation of space for student discursive construction and Chinese language learning. In what follows, we first introduce the Sociocultural Theoretical Framework for our analysis of teacher questioning and second language learning, and then we describe the methodology for this study, including data, analytic tools and data analysis procedures. We then present the findings with both quantitative data and qualitative data of discourse analysis. Finally we discuss the similarities and differences between our findings of Chinese language classrooms and the findings derived from studies in other second language contexts.

Sociocultural Theory: Mediated learning and dialogic discourse

The Sociocultural Theory used in this paper refers to the Vygotskian theory of mediated learning and Bakhtinian theory of dialogism (Wertsch, 1991). Although Vygotsky and Bakhtin come from different fields of scholarship, Vygotsky from developmental psychology and Bakhtin from the field of literary studies, both of their theories emphasize the sociocultural situatedness of communication (Wertsch, 1991). It is argued the thinking of Vygotsky and the thinking of Bakhtin are mutually complementary, and together they give a more complete view of classroom discursive construction and student learning (Marchenkova, 2005; Wertsch, 1991).

According to Wertsch (1991), the core of Vygotsky's theory is that human development is a process mediated by semiotic tools, language as one most important tool. It evolves from the social, intermental domain into the individual, intramental domain in the zone of proximal development (ZPD), which is described as the difference between the original independent capability of a child and what he/she is able to achieve when given some intellectual guidance and support (Kinginger, 2002; Lantolf, 2000; Wertsch & Toma, 1995). This process of an expert assisting a novice in problem solving is also termed as scaffold by Wood, Bruner and Ross (1976). In classroom pedagogic practice, the notions of the ZPD and scaffold highlight the ways in which teachers can assist students' discourse participation and learning, for example, asking student questions and providing appropriate feedbacks depending on the students' level of understanding in classroom interaction (Mercer, 2000; Tharp & Gallimore, 1988).

For the Bakhtinian theory of dialogism, two central concepts are *utterance* and *voice*. According to Bakhtin, utterance usually responds to what precedes it and at the same time anticipates future responses (Hall, Vitanova, & Marchenkova, 2005). Therefore discourse is constructed with utterances woven into a dialogic chain and these utterances are "sequentially contingent" upon each other (Nystrand, 1997, p. 11). Bakhtinian concept of dialogic discourse, therefore, differs from the common view that utterances are independently used by speakers to express their thoughts in communication. But rather, one speaker's utterance inherently creates spaces for the voices of other speakers while at the same time from the utterances of these speakers he/she constructs his/her own voices (Hall et al., 2005).

The above depiction of Vygotskian view of learning and Bakhtinian view of dialogic discourse inform us that analysis of any single utterance in classroom interaction cannot provide full understanding of the quality of instructional practice. The social organization of discourse also plays an important role in implying opportunities of scaffolded assistance for student learning. In studying how teacher discourse contributing to student learning achievement in American secondary English classrooms, Nystrand (1997) differentiates between two types of interactional discourse, monologic and dialogic. A monologic instruction, basically recitation-based, is characterized by a high proportion of inauthentic teacher questions, minimal incorporation of students' responses by the teacher, and little chance for students to introduce new subtopics. Tightly structured into a discourse structure of IRE (Mehan, 1979; Cazden, 2001), this recitation-based interaction emphasizes a transmission of knowledge from teacher to student. It falls in what Bakhtin calls the

authoritative discourse which monologically resists authentic communication and extinguishes the competing voices of students (Skidmore, 2000). Different from recitation-based monologic instruction, a discussion-based dialogic instruction is characterized by high use of authentic questions, uptake (teacher's incorporation of previous answers into subsequent questions), and high-level evaluation (the extent to which student responses are allowed to modify the topic of discourse). This discussion-based classroom interaction becomes what Bakhtin calls the internally persuasive discourse where knowledge is generated from interaction of multiple voices (Skidmore, 2000).

Because of their emphasis on the social and discursive dimensions of language, both Vygotskian and Bakhtinian theories have been introduced into the field of second language education to inform study on second language learning, particularly in relation to classroom discursive processes (Donato, 1994; Hall & Verplaetse, 2000; Hall et al., 2005). However, there is so far little empirical attempt to integrate the two thoughts for explicating the learning taking place in the interactional discourse in second language classrooms. Therefore, in this study we attempt to integrate the two theories to examine how social organization and dynamics of classroom discourse contributes to students' second language learning. We argue that students' second language development in the classroom setting depends not only on how discourse mediates the learning process, but more importantly on how the interaction is dialogically organized with maximal student discourse engagement. Specifically with regard to our study of teacher's classroom questioning behavior, we argue that whether teacher questioning can function as an effective mediational tool and scaffold second language learning by engaging students in dialogic interaction depends on the extent to which:

- Teacher can ask referential questions to involve students into authentic classroom communication and maximize opportunity of students' second language use;
- Teacher can fine-tune questioning discourse and provide students with contingent assistance, such as reformulating questions, proving prompts and incorporating student response with follow-up questions;
- Teacher questions can get verbal responses from students, and what are the types of the responses from students.
- Teacher can follow up on student responses with non-evaluative feedback, for example, expansion and revoicing.

Here we should point out that although the four points are given separately, they are by no means functioning independently as isolated categories; rather they are unified entity. This understanding becomes the basis of the scheme (see next section) we developed for annotating classroom questioning discourse and our discussion of the effect of questioning discourse on student classroom learning.

Data and Methodology

Research Context and Data for this Study

In the present Singapore bilingual language policy and school curricula (See Shepherd, 2005 for a detailed review of the bilingual policy in Singapore), English is the principal medium of instruction and it is taught as a first language. At the same time, the Chinese Language, one of the Mother Tongues of the Singaporeans, is maintained and taught as a second language with its proficiency seen as enabling direct access to Chinese cultural traditions and related values of the Singaporean Chinese community as well as a principal means of maintaining and developing Chinese cultural heritage (e.g., Chan, 2000). For such a reason, Chinese Language, as a core subject in Singapore school education, is learned by Chinese Singaporeans students from the grade of primary one to until they enter college or university studies.

However, it should be pointed out that Chinese as second language as such defined in the Singapore context is a little different from status of a second language in other contexts. This can be seen from the different objectives of learning specified in the curriculum. While the Chinese Language Syllabus (Ministry of Education, 2002) highlights the development of students' oral competence, the same as the teaching of any second languages, it also attaches great importance to the learning of the culture of the Chinese community and the development of strong literacy skills, with the belief that knowing the culture of the Chinese community and being able to read in Chinese is crucial to maintaining the Chinese cultural heritage and keeping the Chinese identity (Chan, 2000). At the same time, the objective of Chinese language education is closely related to national educational goals of developing students' critical and creative thinking skills (Ministry of Education, 2002, 2005). With these multiple objectives of Chinese language teaching, Chinese Language teachers in Singapore today are encouraged to build a supportive and interactive environment to maximize student engagement in classroom interaction (e.g., Chin, 2003).

Although there are frequent calls for the adoption of a productive and student-engaged pedagogy, there are so far few empirical studies examining what is going on in the Chinese Language classroom, including teachers' pedagogic practice and students' Chinese language learning. This important issue began to be addressed in 2003 when the Center for Research in Pedagogy and Practice (CRPP), Nanyang technologic University, started to carry out a large scale longitudinal core research project on Singapore schools (for detail, refer to Luke, Freebody, Shun, & Gopinathan, 2005). The core project aims to give, as one of its foci, a description of what happens in about 1000 classroom lessons in the core curriculum areas in Singapore, including Math, Science, Social Studies, English and Mother Tongues (Chinese, Malay and Tamil). These lessons are coded "in real time" and are aggregated from a whole week of observation of instructional units in randomly sampled schools for two years from later 2003 to later 2005 using the Singapore Pedagogy Coding Scheme, and the coded data is analyzed statistically to identify different patterns and relationships for various purposes. At the same time, these lessons are also audio-taped (with some videotaped) and later transcribed for building a computer corpus of classroom interactional discourse (for details of the SCORE corpus or Singapore Corpus of Research in Education, see Hong, Ahmed, & Sim, 2005).

As a part of CRPP's core project, a computer corpus of Chinese Language classroom data is also being established, as one integral part of the SCORE corpus. The Chinese corpus will contain transcribed data of about 100 hours out of 38 units, or 116 lessons of Primary 5 and Secondary 3 classes. These classroom verbal data are collected from late 2003 to mid 2005 by using audio recorders to record the interaction taking place in classroom teaching. Although the Chinese corpus will finally have 116 lessons of Chinese language classroom teaching, so far only 32 hours of audio-taped data from 8 units of Primary 5 (22 lessons) and 5 units of Secondary 3 (12 lessons) classes have been transcribed and put into the Chinese corpus. The data of this paper are drawn from the 8 units of primary 5 classes in the established corpus. They include 22 lessons which are about 1215-minute long with a text coverage of 171, 461 Chinese words.

Data Analysis Tools and Procedures

To examine the patterns of teacher questioning discourse and how it is interactionally structured in scaffolding Chinese Language learning, we adopt both quantitative and qualitative approaches to the discussion of teacher questioning discourse. This design has recently been advocated by many researchers in the filed of classroom discourse analysis (Snyder, 1995; Lazaraton, 2002). For our research purpose, we use two instruments for the analysis of teacher questioning discourse in Chinese language classrooms: corpus linguistics (Stubbs, 1995; Conrad, 2002) and discourse Analysis (Cazden, 2001; Gee & Green, 1998). We use corpus linguistic approach to generate quantitative data for identifying classroom discourse patterns and then use discourse analysis as a method for a qualitative, micro-analytic study of the dynamics of teacher questioning discourse. This complementary design offers us the opportunity to have a broader and more complete image of the effects of teacher questioning process on second language learning.

Corpus linguistic approach is used in this study because it can organize huge masses of data and are advantageous in using computer-assisted quantitative analysis to provide research with easy access to the patterns of language use (Stubbs, 1995). Since it is efficient in studying natural discourse by identifying language use patterns (Conrad, 2002; Stubbs, 1995), corpus linguistic approach has now been introduced into second language education where researchers discuss how it can inform second language teaching and learning (see Keck, 2004 for a review). For our analysis of classroom teacher questioning discourse, the use of the corpus Linguistic approach involves three big steps: 1) developing a multilevel annotation scheme for tagging teacher questioning discourse (See Appendix 1 for the annotation scheme we developed), 2) using the corpus tool MMAX2 to annotate transcripts (transcribed using the software *Transcriber*. A simplified transcribing convention is provided in Appendix 2), and 3) using query tool to generate quantified data of teacher questions, student responses, and teacher feedbacks (For details of how corpus linguistic approach is used in the SCORE corpus, see Hong et al., 2005).

Apart from providing quantified accounts of teacher questioning in classroom discourse generated using the corpus-driven approach, we also use the method of discourse analysis to do a micro analysis of the interactional structure and dynamics of teacher

questioning discourse within the Sociocultural Theoretical Framework reviewed above. By discourse analysis, we mean the study of extended talk in natural settings rather than individual utterances in isolation (Stubbs, 1983; Riggenbach, 1999). Discourse analysis considers context to be of primary importance and pays close attention to the surrounding text and the sociocultural environment that frames the production and interpretation of message (Riggenbach, 1999). Because its power in elucidating and interpreting discourse processes, discourse analysis has now gone beyond its original discipline as a linguistic inquiry and become a powerful methodological tool in addressing sociolinguistic issues of talk in classroom learning and teaching (Cazden, 2001; Gee & Green, 1998). For classroom second language learning, discourse analysis, by describing in detail how interaction is carried out in classroom contexts, provides a good understanding of how language is used for construction of meaning and what it means to students' second language learning. Therefore, through the analysis of the discourse dynamics of teacher-student talk, the process of how teacher uses and adapts his/her talk to engage students' participation can be revealed and how questions are used in interaction to facilitate students' understanding and language use can be better explicated. With this analytical tool of discourse analysis, we will then have a clearer picture of how teacher's questions are structured interactionally in facilitating or constraining student discourse participation and second language learning.

Research Findings

In this part, through quantitative analysis of corpus data and micro discourse analysis of interactional transcripts, we present the pattern of classroom questioning patterns in Singapore Chinese Language classrooms and explicate the influence of structure and dynamics of teacher questioning discourse on students' Chinese Language learning. For the quantitative part, we first describe a profile of teacher and student discourse in the questioning process; we then analyze the types of teacher questions, their pedagogic purposes and the elicitation strategies adopted by teachers in engaging students in classroom discourse. Next, we relate teacher question to student response. We analyze the power of questions in eliciting verbal response from student and give an account of the different types of student response. Finally, we relate teacher question to teacher feedback. We analyze in what context of asking a certain type of question, the teacher is more likely to give student feedback and what these feedbacks are. At the end of this section we do a qualitative discourse analysis of the transcripts. We describe what teacher and students do within the evolving sequence of talk and analyze how teachers ask questions, how students make sense of them and how teachers deal with student contributions. We pay close attention to the interactional structure of teachers' questioning behaviors and the roles of different types of questions and questioning strategies in promoting negotiation of meaning between teacher and students.

Profile of teacher questioning discourse in Primary 5 Chinese Corpus

Table 1 shows the data of classroom teacher questioning discourse, including the frequency of occurrences and text coverage of teacher questions, student responses and teacher feedback (details of these categories and subcategories are presented in later part of this paper). The table shows that in the 171,461-word Primary 5 Chinese corpus, there are 2597 questions asked of students by teachers. Totally these questions have a text coverage of 23,770 words, which accounts for 13.86% of the total words in the corpus. The average length of teacher's question is about 9.15 Chinese words. For student response, for all the 2,597 questions asked, students provide 1829 responses[2], which contain 12,616 Chinese words and cover about 7.36% of the total words in the corpus. The average length of these responses is 6.90 Chinese words. Table 1 also shows the number of occurrences of teacher feedback on student responses[3]. For all the 1829 responses provided by students, there are about 1542 occurrences of teacher feedback, which contain 15,644 Chinese words, and these words take about 9.12% of the total words in the corpus. The average length of these feedbacks is about 10.16 Chinese words.

Discourse Types	Occurrences	Words	Percentage	Words per occurrence
Teacher Question	2,597	23,770	13.86%	9.15
Student Response	1,829	12,616	7.36%	6.90
Teacher Feedback	1,542	15,644	9.12%	10.16

Table 1 Profile of Teacher Questioning Discourse in the P5 Chinese Corpus

From the above data, we can see that teacher questioning discourse, which involves teacher asking a question, students providing a response and teacher giving feedback, takes about one-third of the discourse in the Chinese corpus. Among these triadic dialogues, teacher discourse (questions and feedbacks) is three times as much as the student discourse (response), and is greater in length than student responses. In general, the data here show that in the Chinese Language classes, teacher questioning discourse is dominated by the teacher. However, there is no clear evidence that students are passively engaged in the interaction with their teacher or the class is more monologically constructed. To know the details of the social organization of discourse and its effects on Chinese language learning, we need further evidence on the types of question teachers ask, and student responses and teacher feedback strategies, which will be discussed in the following parts.

Question Types, Pedagogic Purpose & Elicitation Strategies

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2 Not all teachers' questions are successful in eliciting responses from students. Some do not receive any response, while others receive multiple responses. Details about how many questions receive responses from students and what these responses are like are provided in part 3 of this section.

3 Again, not all student responses receive feedback from the teacher. While some responses do not get any feedback from the teacher, others may get multiple feedbacks. Details about how many questions are followed up with feedbacks and what these feedbacks are like are provided in part 4 of this section.

Table 2 shows the proportion of different types of questions asked by Chinese Language teacher[4]. In terms of both occurrences and words, there is not much difference between display questions and referential questions, each accounting about half of the questions asked by the teacher. Table 2 also shows that about 69.08% (30.77 Selection Question + 38.31 Factual Question) of the 2597 teacher questions are to ask students to select an answer or provide simple factual information, which does not require high involvement in terms of language use on the part of the students. Those questions requiring students to interpret/explain and reason, which can engage students in deep discourse participation, account for 24.95% and 5.97% of all teacher questions. Among the reasoning questions, those that ask students about their personal opinions of why and how they do something are very rare (46 occurrences), taking about only 1.77% of teacher questions.

Question Types	Subcategories	Occurrences	Words	Percentage	
				Occurrences	Words
Display	Selection	169	1926	6.51%	8.10%
	Factual	579	5787	22.29%	24.35%
	Explanation	454	4685	17.48%	19.71%
	Reasoning	109	1236	4.20%	5.20%
	Subtotal	1311	13634	50.48%	57.36%
Referential	Selection	630	5274	24.26%	22.19%
	Factual	416	2921	16.02%	12.29%
	Explanation	194	1591	7.47%	6.69%
	Reasoning	46	350	1.77%	1.47%
	Subtotal	1286	10136	49.52%	42.64%

Table 2 Different types of teacher questions in teacher-student interaction

Table 3 provides the data of the pedagogic purposes of Chinese Language teachers' questions. With this evidence of where teacher questions are used and for what purposes, we can achieve a better understanding of teacher questioning process and the role of teacher questioning discourse in creating a dialogic environment for student participation and mediating student classroom learning. As we can see from Table 3, for all the 2597 questions asked by teachers, 711 are used for classroom management purpose (27.38%); 1626 for instructional purpose (62.61%) and 260 for discussing other topics (10.01%). Among those questions for classroom management, a large proportion are focused on organizational purposes (24.03%), such as "Are you ready?", "Do you bring your worksheet?", "Are you done?". For those questions focused on instruction (1626 out of 2597), most of them are used in the teaching of vocabulary knowledge and the content of the texts

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4 Following the convention in second language education area, we differentiate between display and referential questions. However, since the dichotomy cannot account for the depth of teacher's questioning behavior, following Tsui (1985) but with modifications, we subcategorize each type of question into selection, factual, explanation and reasoning, depending on what teachers expect students to do. Selection question means that students only need to select an answer which is already provided in the question. Normally it is "Yes/No" question and alternative question. Factual question refers to the one where teacher expects students to provide factual information. Explanation question requires students to interpret and explain. Reasoning question asks student to reason or argue, and in most cases they are WHY and HOW questions.

in the textbook (about 56.83%). Questions on teaching of grammar, pronunciation and discourse/textual structures only take a very small proportion, about 5.24%, with only 0.89% on discourse/textual structure. In classroom teaching, only 0.54% of the questions are focused on the teaching of learning strategy and other language-related skills, as can be seen in the "other" category in the part of instruction.

Pedagogic Purpose	Subcategories	Occurrences	Words	Percentage	
				Occurrences	Words
Management	Regulatory	87	757	3.35%	3.18%
	Organizational	624	4622	24.03%	19.44%
	Subtotal	711	5379	27.38%	22.63%
Instruction	Vocabulary	856	8396	32.96%	35.32%
	Pronunciation	32	234	1.23%	0.98%
	Grammar	81	724	3.12%	3.05%
	Text Discourse	23	287	0.89%	1.21%
	Content Meaning	620	6480	23.87%	27.26%
	Other	14	161	0.54%	0.68%
	Subtotal	1626	16282	62.61%	68.50%
Other		260	2109	10.01%	8.87%

Table 3 Teachers' Pedagogic Purpose in Asking Questions

Another important variable that is crucial to understanding the mediating role of teacher questioning discourse is the questioning strategies employed by teachers in providing contingent help to scaffold student understanding and language use and to engage as many students in classroom discourse. As we all know, when a teacher asks a question, he has an agenda for the ensuing discourse. He can either ask another question, a new question, no matter whether the question receives a response from students, or re-elicit by repeating or reformulating the question to the student whom the original questions is directed at or redirect it to another student. Table 4 shows these different elicitation strategies teachers use in the questioning process[5]. Generally, Chinese Language teachers ask a lot of new questions (72.77% of the 2597 questions), among which new topic and non-elaboration questions take more than 50%. The findings also show that Chinese Language teachers also use their elaboration questions (15.75%) to further involve students in classroom discourse. At the same time, teachers can re-elicit questions (27.23%), either repeat them to mark the critical points to be learned or reformulate them to lower the complexity or cognitive level, as contingent help to assist students' discursive construction. The dialogic feature of these strategies can be particularly seen in that teachers redirect their questions to other students (44% of re-elicited questions) for co-construction of meaning.

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[5] In our annotation, we divide classroom teaching into episodes (e.g., teacher-guided reading) based on the different topics of instructional discourse, and we mark the first question asked in an episode as a new topic questions. Within an episode, we look at whether a question is re-elicited. If not, we categorize them into clarification and elaboration. For all the other questions which are neither clarification nor elaboration, we name them as non-elaboration elicitations.

Elicitation Types	Subcategories		Occurrences	Words	Percentage Occurrences	Percentage Words
New Elicitation	New Topic		87	998	3.35%	4.20%
	Clarification		145	619	5.58%	2.60%
	Elaboration		409	3593	15.75%	15.12%
	Non-elaboration		1249	13026	48.09%	54.80%
	Subtotal		1890	18236	72.77%	76.72%
Re-elicitation	Repetition	Direction	221	1521	8.51%	
		Maintained				6.40%
		Re-directed	292	1991	11.24%	8.38%
	Reformulation	Direction	175	1689	6.74%	
		Maintained				7.11%
		Re-directed	19	333	0.73%	1.40%
	Subtotal		707	5534	27.23%	23.28%

Table 4 Elicitation Strategies Adopted in Teacher Questioning Discourse

Teacher Question & Student Response

While the parts above focus exclusively on the analysis of teacher questioning discourse within teacher initiation move, this part and the next part look at teacher questioning by extending it to the chain of interaction between teacher and students, including student response and teacher feedback. In this part, we discuss the findings on the power of teacher questions in receiving responses from students and the details of student responses. Table 5 shows the situation of teacher questions in receiving responses from students. For all the 2,597 teacher questions, 1,258 have not received any responses from students, which account for about half all the teacher questions. For the 1339 questions which do receive responses from students, most of them are single response, that is, the question only receive one response from students. There are 361 questions that receive multiple responses from students, which account only 13.90% of all teacher questions. Table 5 shows further details about the effects of referential and display questions in eliciting verbal response from students. About 60% of teacher's referential questions fail to get any responses from student. For those that do get response from students, those that receive single response take about 30.25% of all the referential questions while those that receive multiple response only takes about 10.73% of all the referential questions. For display questions, those that do not get any response from students are 38%, with about 45% and 20% of these display questions getting single and multiple responses from students. These proportions are much higher than those of referential questions (30.25% and 10.73%).

Question Types	With(out) responses		Occurrences	Percentage across Questions	Percentage within the type of Question
Display	Without Response		499	19.21%	38.06%
	With Response	Single	589	22.68%	44.93%
		Multiple	223	8.59%	19.01%
	Subtotal		**1311**	**50.48%**	**(100%)**
Referential	Without Response		759	29.23%	59.02%
	With Response	Single	389	14.98%	30.25%
		Multiple	138	5.31%	10.73%
	Subtotal		**1286**	**49.52%**	**(100%)**

Table 5 Questions with (out) Responses from Students

Table 6 provides the data of different types of student responses in Singapore Chinese Language classrooms. About half of student responses (1829 occurrences) belong to the types of selection and complement (15.04% + 36.52%), while explanation and reasoning responses take about 35% with reasoning response taking only 6.34%. This corresponds to the large number of selection and factual questions asked by the teacher, which only require students to make a choice between yes or no, select an answer that is already in teacher's question, or complement the question with factual information. Table 6 also shows the text coverage of different types of student response. While selection and complement responses take more than 50% of all responses in terms of occurrences, the words they have only cover a little more than 30% of all student response words. On the contrary, for explanation and reasoning responses, while they only take about 35% in terms of occurrences, they cover 44% of the words of student responses. The average length of explanation and reasoning responses (over 8 words) is obviously greater that that of selection and complement responses (3-5 words).

Student Response Subcategories	Occurrences	Words	Percentage		Words per occurrence
			Occurrences	Words	
Selection	275	970	15.04%	7.69%	3.53
Complement	668	3012	36.52%	23.87%	4.51
Explanation	535	4639	29.25%	36.77%	8.67
Reasoning	116	970	6.34%	7.69%	8.36
Clarification	14	66	0.77%	0.52%	4.71
Repetition	25	224	1.37%	1.78%	8.96
Modification	69	542	3.77%	4.30%	7.86
Other	127	408	6.94%	3.23%	3.21

Table 6 Features of Student Responses

Teacher Question & Teacher Feedback

This part looks at how teachers follow up on student responses and provide feedback to further involve students in classroom discourse. As table 7 shows, among 1339 out of 2579 teacher questions that have received responses from students (see Table 5), 463 (34.58%) questions are not followed up with teacher feedback, and 876 (65.42%) questions are followed up with teacher feedbacks, including 470 (35.10%) with a single feedback and 406 (30.32%) with multiple feedbacks (details of teacher feedback are given in Table 8)[6]. Another finding worth of attention is whether a certain type of question is more (or less) likely to be followed up with teacher feedback after a student responds to it. As the data in Table 7 show, for 812 teacher display questions which have received responses from students, about 72% of them are followed up with teacher feedback, with only 28% without any feedback. However the situation is different for referential questions. For all the 527

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6 By single feedback, we mean that the teacher's feedback is of only one type. Multiple feedbacks are combination of different types of feedback. For example, a teacher can first give a positive feedback on a student response and then revoices this student response, which may be followed by an expansion where provides more related information to expand student thinking.

referential questions that have received a response from students, about 45% of them have not been followed up with a feedback after a student response is given.

Question Types	With response & with(out) feedback		Occurrences	Percentage across questions	Percentage within questions
Display	Without Feedback		226	16.88%	27.83%
	With Feedback	Single	320	23.90%	39.41%
		Multiple	266	19.86%	32.76%
	Subtotal		**812**	**60.64%**	**(100%)**
Referential	Without Feedback		237	17.70%	44.97%
	With Feedback	Single	150	11.20%	28.46%
		Multiple	140	10.46%	26.57%
	Subtotal		**527**	**39.36%**	**(100%)**

Table 7 Questions with Responses from Students and with (out) Teacher Feedback

Table 8 shows the different types of feedback that teachers give on student response. Evaluative feedback where teachers either positively or negatively (including correcting errors in student response) evaluate student responses takes 22.10% of all the 1542 feedbacks. Revoicing, one type of non-evaluative feedback, where teachers repeat or reformulate student response to the whole class takes the largest proportion, about 36.71%. Other non-evaluative feedbacks include acknowledgement (teacher showing attention to student response with backchanneling cues), prompt (teacher providing prompt as contingent help to guide student through problem solving process), expansion (teacher elaborates on student response with related information to expand the space of learning), strategic comment and other feedbacks. Totally, we see non-evaluative feedbacks take about 77.90% of all teacher feedbacks, among which those that scaffold student participation and expand the space of learning, including prompt, expansion, and revoicing, take about 57.53% of all teacher feedbacks.

Teacher Feedback Subcategories	Occurrences	Words	Percentage	
			Occurrences	Words
Positive Evaluation	205	926	13.29%	5.92%
Negative Evaluation	102	873	6.61%	5.58%
Error correction	34	324	2.20%	2.07%
Acknowledgement	102	234	6.61%	1.50%
Revoicing	566	4099	36.71%	26.20%
Prompt	70	817	4.54%	5.22%
Expansion	251	6180	16.28%	39.50%
Strategic Comment	191	2046	12.39%	13.08%
Other	21	145	1.36%	0.93%

Table 8 Features of Teacher Feedback

Discourse Analysis of Two Interactional Transcripts

The above quantitative analyses give a general picture of the pattern of teacher questioning discourse in Singapore Chinese Language classrooms. However, the findings are limited in uncovering the dynamics of teacher questioning discourse and its effects on second language learning. To supplement the quantitative findings above, in this part we do a qualitative micro discourse analysis of two interactional transcripts. We show how teacher

questioning discourse can display different dialogicality of teaching and how the two types of instructional discourse as shown in the two transcripts facilitate or constrain student discursive construction and Chinese Language learning.

Excerpt 1 (SCORE_Chn_009)

1	Teacher	这个丁家呢，每天得派一个人挑着水桶，老远去打水。我们先来看这个桶字，% % 来看一下桶。这个桶呢是盛东西的器具。如果用木头做的呢，就叫？	This Ding family, every day had to assign a person to shoulder water buckets, very far to get water. Let's first look at the character 桶, % %, look at 桶. A bucket is an appliance to hold something. If it is made of wood, it is called?
2	Student	工具。	Tool.
3	Teacher	叫什么桶？木头做的叫什么桶？	Called what bucket? Bucket made of wood is called what bucket?
4	Students	水桶。	Water bucket.
5	Teacher	木头做的！	Made of wood!
6	Class	*CHORUS* 木桶。	*CHORUS* Wood bucket.
7	Teacher	如果是木头做的就叫木（.）桶。如果用铁皮，铁来做的就叫？	If it is made of wood, it is called wood *(.)* bucket. If it is made of iron, made of iron it is called?
8	Students	铁桶。	Iron bucket.
9	Teacher	铁桶。塑料来做的呢？	Iron bucket. What if it is made of plastic?
10	Student	水桶。	Water bucket.
11	Teacher	塑料（.）桶。这个桶做来之后呢，可以装东西。如果是装水的就叫？	Plastic *(.)* bucket. After a bucket is made, can hold things. If it is used to hold water, it is called?
12	Class	*CHORUS* 水桶。	*CHORUS* Water bucket.
13	Teacher	\\水桶。好，那么这个桶什么边，什么旁？	\\Water bucket. Ok, then what is the semantic component of 桶?

In this excerpt, the whole questioning process tends to be pre-scripted and monologic with teacher aiming to elicit correct answers from the students with little space for students' discursive construction. With the purpose of checking students' knowledge in the Chinese character 桶 (bucket) and its collocation with adjectives describing the materials from which a bucket is made, the teacher uses six questions requiring students to provide factual information to display word knowledge. One of the distinctive features of this discourse is the structured blank-filling questions the teacher asks of the students. In the interaction, the teacher uses the same sentence structure with the adjectives to modify 桶 emphasized in the conditional clause in the questions (for example, "If it is made of wood, it is called?" in turn 1; "If it is made of iron, made of iron it is called?" in turn 7; and "If it is used to hold water, it is called?" in turn 13). With this form of elicitation, student responses are often filling the gaps to complement teacher questions to display their linguistic knowledge with little opportunity for personal expression. And the responses are often short in length, about one Chinese word (for example, 水桶 in turn 4, 木桶 in turn 6, and 铁桶 in turn 8).

This monologic feature of teaching can also be seen from the feedback strategies the teacher uses after a student response is given. In this interaction, teacher feedbacks clearly signal the teacher's purpose in getting a correct answer from the students. And following

this scripted discourse, students are put in a position to think about what their teacher wants and gear their discourse to the expectation of their teacher with little chance to involve in discussion with expression of personal voices. For example, in turn 1, after the teacher asks the students what a bucket is called if it is made of wood, student gives the answer referring to that the bucket is a tool (工具), a superordinate of bucket semantically (turn 2), which is not a wrong answer. However it is obviously not what the teacher wants. Therefore, she repeats the question ("called what bucket?" in turn 3) to signal to the students that "tool" is not the correct answer, and that the students have to reconsider it to given a more acceptable answer. However, because in turn 1 the teacher obviously refers to the water bucket used by the Ding Family, students seem to think that that's what the teacher wants, and therefore, in turn 4, they give an answer of water bucket (水桶). This process goes on until a correct answer is finally given in turn 6. This same scripted discourse takes place again from turn 7 to turn 13 where the teacher repeats the answer given by students when it is correct (turn 10 and turn 13), and correct the mistakes while a wrong answer is given (turn 11).

In general, teacher questioning discourse in Excerpt 1 is pre-scripted and monologic. Knowledge is transmitted from teacher to students. The primary knower is obviously the teacher, who controls the flow of the talk with the questions she asks of the students. By giving short answers, students are only involved in reproducing information that is already known to the teacher. They do not have chances to give personal responses. Using Bakhtin's term, teacher questioning in this excerpt features authoritative discourse which monologically extinguishes student voices. Since the space of students' discursive construction is limited in this monologic interaction, we doubt that teacher questioning discourse in this transcript is effective in engaging students in meaningful learning and in providing scaffolded assistance for students' second language learning.

Excerpt 2 (SCORE_Chn_024)

1	Teacher	在这个课文里头啊，它说戴帽子的老师。这个老师的特点就是，他在班上来的时候啊，他已经戴着帽子。那你有没有注意到，什么特别的老师，他们的穿着啊，还有行为，有什么特别啊？	In this text, it tells about the teacher with a hat. The feature of this teacher is, when he is in the classroom, he already wears his hat. Do you note, what special teachers, their clothing, and their special behaviors, what special features?
2	Student	⌈陈老师⌉啊，他每次穿一样的衣服。	⌈Teacher Chen⌉, he every time wears the same clothes.
3	Student	⌈陈老师。⌉	⌈Teacher Chen.⌉
4	Student	不是蓝色就是，呃，红色。	Either blue or, eh, red.
5	Teacher	有些老师不喜欢逛街，衣服穿来穿去就那几套，行吗？	Some teachers don't like shopping, only a few suits, ok?
6	Student	不是，⌈颜老师⌉。	No, ⌈Teacher Yan⌉.
7	Student	⌈黄老师⌉的戒指，每，每天都换颜色的。里面的石头每天都换颜色。	⌈Teacher Huang's⌉ ring, every, every day changes color. The stone inside every day changes color.
8	Student	老师，老师，他在班上把那个戒指戴在（）⌈E⌉- Mr. Foo -⌈E⌉，在那个什么…	Teacher, teacher, he in classroom wears the ring on ( ) Mr. Foo, on that what…
9	Teacher	⌈$$⌉家聪的注意力啊，很好啊。他说老师的手指上啊，戴的戒指啊。(..)	⌈$$⌉ Jiacong's attention ah, very good ah. He said that on teacher's finger ah,

15

		哦，*[E]*- Mr. Foo -*[E]* 是吗？他的戒指啊，常常换不同颜色的戒指啊，给你注意到了。	the ring wearing ah. *(..)* Oh, Mr. Foo right? His ring ah, often changes rings of different colors, you notice that.
10	**Student**	周老师每次穿一样的鞋子。	Teacher Zhou every time wears same shoes.
11	**Student**	周老师每次都穿深色的鞋子。	Teacher Zhou every time wears dark-color shoes.
12	**Student**	啊，我，我知道。她 *(.)* 穿 ...	Ah, I, I know. She *(.)* wears…
13	**Teacher**	哎，你们也蛮注意自己的老师的啊。	Aih, you pay attention to your teachers very much.
14	**Student**	我的老师，*[E]*- Mr. Foo -*[E]*，他每次来都穿那个 *(.)* 红色的长衣服，黄色的，橙色衣服。每次都是，还有每次都是长，*[* 呃，长，*] (..)* 长袖的。*[E]*- Then -*[E]* 每次都，呃，有很多不同的颜色。	My teacher, Mr. Foo hor, he every time wears that *(.)* red long clothes, yellow, orange clothes. Every time so, also every time long, *[* eh, long *] (..)* long sleeve. Then every time, eh, has different colors.
15	**Student**	*[* 呃，长袖的。*]*	*[* Eh, long sleeve. *]*

Different from the discourse in Excerpt 1, teacher questioning discourse in Excerpt 2 to a large extent features dialogic interaction where students have much opportunity to interpret utterances, giving their voices rather than displaying linguistic knowledge, and expanding the space of participation for their peer students. In the discussion on the referential question asked by the teacher, students' answers support each other in identifying special features of different teachers. The talk goes on in the form of free discussion rather than scripted recitation. For example, in turn 2, when one student says that Teacher Chen every time wears the same clothes, another student expands this answer saying that the clothes worn by Teacher Chen is either blue or red. Another example can be found in turn 10, 11, and 12 where students show agreement with each other saying that Teacher Zhou is a teacher with special features. In turn 11, after one student says that Teacher Zhou every time wears same shoes, another student shows his agreement and expands the response pointing out that the teacher every time wears dark-color shoes.

How this discussion-based communication is helpful to student second language learning can also be seen in the responses students give. In giving these responses, students are manipulating their language resources, including word knowledge, grammatical competence and pragmatic competence, to construct discourse and meaning (e.g., turn 7, 8, 10, 11, and 14). Different from Excerpt 1 where students only display their linguistic knowledge in drilled discourse, in this excerpt students have opportunity to use the target language and develop language competence while engaging in authentic communication with free exchange of ideas.

Another distinctive feature of the interaction that is related to the success of teacher questioning in encouraging student discursive construction is the appropriate feedback strategies the teacher uses. Different from Excerpt 1 where teacher controls the flow of discourse with her evaluative feedbacks, in Excerpt 2 we find teachers' follow-up moves are not to evaluate student response but rather the expression of teacher's opinion to show her agreement of disagreement with the students. Teacher's withholding evaluations on students' responses obviously encourage students to use the target language to express themselves. This dialogic interaction, therefore, expands the space for the student classroom

participation. For example, after students give their responses in turn 2, 3, 4, rather than evaluating these responses saying something like "Good, any other teachers?" which might constrain the space of discursive construction, the teacher gives her opinion that some teachers don't like shopping and therefore they only have a few suits. Following this feedback students go on to take control of the discourse without being nominated by the teacher and they initiate subtopic for discussion by pointing out the features of another teacher. Based on the three feedbacks given by the teacher, the discourse can be segmented into four parts (turn 1-6; turn 7-9; turn 10-13, and turn 14-15) with students self-nominate to engage in discourse while the teacher becomes a member of the class in participating in the discussion.

Generally speaking, this discussion-based dialogic discourse creates much space for student second language learning. Knowledge is not transmitted from the teacher to the students; rather it is generated through "heteroglossia" or intermingling of multiple voices from both students and teacher. The whole discourse features what Bakhtin terms the internally persuasive discourse. The talk between teacher and students is built into a dialogic chain with each other's utterance responding to the utterances before it and at the same time anticipating following utterances. With this dialogic questioning discourse, the teacher constructs opportunities for students' active discursive construction and facilitates students' Chinese Language learning.

Discussions and Conclusions

The findings presented above based on our quantitative analysis and micro discourse analysis show the pattern of teacher questioning in Singapore Chinese language classrooms and the effects of discourse structure and dynamics on mediating and scaffolding student second language learning. Generally most of teacher questions in Singapore Chinese language classroom only require students' selection of an answer or provision of factual information rather than explanation and reasoning. Pedagogic purposes of teacher questions show that teacher questioning discourse is to a large extent textbook-based and vocabulary-centered with scant attention to high order discourse/genre knowledge, which is crucial to students' Chinese literacy development. At the same time, although teachers ask similar number of referential and display questions, space of authentic communication between teacher and students is limited since half of these questions fail to elicit any verbal response from the students, especially referential questions.

The findings also show that in terms of elicitation and feedback strategies Chinese Language teachers can sometimes create a supportive environment to encourage student participation. They adapt their elicitation strategies to fine tune their discourse and incorporate student voices with elaboration questions. They also revoice student responses, provide prompts, and expand on student response to construct more space for students' thinking and learning. However, because teacher talk dominates the questioning discourse with small proportion of student responses, which are mostly selection of an answer or complement of factual information, and students often do not have chance to self-nominate

to answer teacher's question, we doubt that students are involved dialogically in classroom discussion.

In general the findings derived from Chinese language classrooms show that teacher questioning is a complex discourse phenomenon which is far beyond the simple examination of discrete teacher or student behaviors. Question types alone can hardly be used to determine whether or not a question can provide scaffolded assistance for students' second language learning. It depends on the larger discourse structure and the inter-dependence of discourse acts as types of question, elicitation strategies, student responses and teacher feedbacks. Our micro discourse analysis especially shows that for teacher questioning to effectively scaffold learning, teacher has to build a supportive and dialogic learning environment to engage students in classroom discursive construction and construct opportunity for students to use the language resources available to them to mediate their learning experience. The micro discourse analysis also shows that recitation-based monologic interaction, because it is characterized by tight teacher control of discourse and conversational turn bid, tends to exclude or even extinguish student voices. Therefore it constrains the space for student second language learning.

Our findings from Chinese Language teaching in the Singapore context share a couple of points with the findings derived from studies of classroom discourse in other contexts, such as the dominance of teacher discourse in the triadic dialogic between teacher and students, teacher control of discourse flow, the difficulty of display questions in eliciting long and complex responses from student (Tsui, 1995; Brock, 1986), and the importance of teacher feedback moves in influencing the scaffolding function and dialogicality of teacher questioning discourse (Nystrand, 1997).

However, our findings also show some differences from the findings derived from teacher questioning studies in other second language contexts. While in the literature Second language teachers, mainly ESL teachers, are found to ask predominantly more display questions than referential questions (Ellis, 1994; Chaudron, 1988), we find that Chinese Language teachers in Singapore ask equal number of referential and display questions. Besides, the literature shows that second language teachers are encouraged to ask more referential questions with the belief that referential questions are more capable in eliciting long and grammatically more complex utterances. However, in our study we find a large number of teacher questions fail to receive any responses from students, especially referential questions. Another distinctive feature of the Chinese language is teachers' predominant focus on vocabulary teaching and text comprehension, especially vocabulary teaching. In the second language literature, studies on teacher-student interaction have focused on the development of student oral competence, much in terms of their linguistic accuracy. However, in the Singapore context the focus is on interpreting meaning of Chinese words and understanding their usage. Although vocabulary knowledge is important to Chinese literacy acquisition, there is no clear evidence in the literature that predominant focus on Chinese vocabulary in classroom pedagogic practice will lead to high-level Chinese oracy and literacy.

All these distinctive features of teacher questioning discourse pointed above make us think whether they are specific to Chinese Language classrooms in general or Singapore Chinese Language classrooms in particular. However, to answer these questions we need further studies on other issues related to teacher questioning discourse, for example, teacher's epistemological beliefs of asking questions, linguistic and cultural influences on classroom pedagogic practice, etc. Definitely our study, by only looking at the talk between teacher and students, cannot answer all these questions. However, by analyzing and revealing the dynamics and structure of teacher questioning discourse, it provides a starting point for further inquiry on classroom discourse and its effect on second language learning.

We believe our study is both theoretically and pedagogically significant. It contributes to the research on second language learning and pedagogy. While existing studies on second language learning mostly follow a psycholinguistic approach with little attention to the social and discursive side of language use, our study explicates the discursive process of classroom-based second language learning by focusing on teacher questioning discourse within a sociocultural theoretical framework. In addition, because it helps uncover the effects of discourse structure and dynamics on space of classroom participation and learning, our study also has its pedagogic significance. It provides second language teachers with a better understanding of the importance of classroom interaction in students' second language learning for future pedagogic improvements or innovation. With regard to Chinese Language teaching, although our research is conducted with Singapore students as participants, we believe it also informs the teaching and learning of the Chinese language in other settings, such as teaching Chinese as a foreign language or teaching Chinese as in mother-tongue maintenance programs in other countries.

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Appendix 1: A Scheme for Tagging Teacher's Questioning Discourse in Singapore Chinese Language Classrooms

	Authenticity	Elicitation Strategy	Pedagogic Purpose
Teacher Questioning	**Display**	**New elicitation**	**Management**
	Selection	*New Topic*	*Regulatory*
	Factual	*Clarification*	*Organizational*
	Explanation	*Elaboration*	**Instruction**
	Reasoning	*Non-Elaboration*	*Vocabulary*
	Referential	**Re-elicitation**	*Pronunciation*
	Selection	*Repetition (Direction Maintained)*	*Grammar*
	Factual	*Repetition (Re-directed)*	*Text/Discourse*
	Explanation	*Reformulation (Direction Maintained)*	*Content/Meaning*
	Reasoning	*Reformulation (Re-directed)*	*Other*
			Other
Student Response	**Selection**		
	Complement		
	Interpretation		
	Elaboration		
	Clarification		
	Repetition		
	Modification		
	Other		
Teacher Feedback	**Positive Evaluation**		
	Negative Evaluation		
	Error correction		
	Acknowledgement		
	Revoicing		
	Prompt		
	Expansion		
	Strategic Comment		
	Other		

Appendix 2: Transcription Conventions

[$$]	Laughter quality in utterance
[	Overlap onset
]	Overlap termination
( )	Ungotten talk
(.)	Gap between utterances

(..)	Extended gap between utterances
. . .	Trail off
⌈E⌉	Code-switching—English Spoken
\ \	Falling intonation contour
%%	Background conversation that is inaudible
CHORUS	Chorus voice
Student	Student whose name is not identified
Class	Whole class