Classroom Discourse and Reading Comprehension in Bilingual Settings: A Case Study of Collaborative Reasoning in a Chinese Heritage Language Learners’ Classroom

Dissertation

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Abstract

This dissertation examines the participation of one Chinese teacher and five 13 to 15 year-old Chinese heritage students in a classroom in a Chinese community school during group discussions about narrative texts. In this study, the teacher used Collaborative Reasoning (CR) (Anderson, et al., 2001) to help the Chinese heritage students extend their discussion repertoires and achieve a deeper understanding of narrative text in the target language, Chinese. The purpose of this study was to explore whether and how CR helped students to use discourse features that index high-level thinking during their discussions about Chinese stories and to use multiple sources of information and kinds of reasoning while making arguments. This study also explored how the students incorporated what they learned from the discussions into their reading to attain a deeper understanding of the text.

A combination of case study and single-subject experimental design was used in this investigation. Data were collected between September 2010 and April 2011. Data sources included: field notes collected from participant observation, transcripts of videotaped classroom discussions, audio-taped oral tasks of four students, and audio-taped teacher interviews. The videotaped classroom discussions were transcribed and analyzed for discourse features that index students’ high-level thinking (Soter, et al., 2006, 2008) and the intellectual content of the talk (Marshall, Smagorinsky, & Smith, 1995). Descriptive statistics were used to analyze and report the results of students’ performance in the oral tasks which included tasks that
assessed their reading speed, accuracy rate, retelling of the story, and reading strategies.

The findings indicated that the participation structure and patterns of discourses in CR discussions were different from those in non-CR discussions. The participation structure and discursive patterns in CR discussions allowed more students’ voices to be heard, responded to, and extended. The change in participation structure and discursive patterns also changed whose knowledge was valued in the exchange of ideas. The teacher and students used more discourse features that indexed high-level thinking after CR was introduced; their discourse showed a higher incidence of exploratory talk, uptake, authentic questions, high-level-thinking questions, affective response questions, and elaborated explanations. The students’ discourse also evidenced multiple kinds of knowledge sources, such as self experience, general knowledge, and knowledge from previous reading/lecture/discussion to support their arguments, and multiple kinds of reasoning, such as evaluation and generalization.

The discourse analysis also revealed a change in the teacher’s discussion strategies. In non-CR sessions, the strategies that the teacher used were mainly sharing her experience, asking students to find information from the text, asking students to brainstorm to find possible solutions or reasons related to the central questions about the stories, and using mini-lessons to help students with difficult phrases, key words and sentences. However, in the CR discussions, the teacher more often asked questions to prompt the students to clarify and explain their comments. She also summarized their findings to elicit more comprehensive responses from the students. She modeled how to compare and contrast different perspectives while making
decisions about how to link different ideas or sustain on-topic discussion. In sum, the teacher’s utterances were highly responsive to the students’ remarks after CR was introduced.

Results of analysis of students’ performance in the oral tasks indicated that there was little or no difference in students’ reading speed, accuracy, and retelling between non-CR and CR sessions. However, results showed that the students gradually reduced their dependence on Pinyin tools after the implementation of CR. They increased in the usage of metacognitive reading strategies including rereading difficult parts of the text, using repair strategies when their reading comprehension failed, solving problems using background knowledge and personal experience, and expressing awareness of their reading difficulties. Results also indicated that, after CR was introduced, the students incorporate more counter arguments in their statements when they were asked to restate their positions and opinions after the discussions.

From a theoretical perspective, constructs from social-cultural theory and the notion of dialogism were found to be useful in explaining the way the introduction of CR shaped classroom instruction. From a pedagogical perspective, the findings suggest that the adoption of CR in a Chinese heritage school setting may alter the participation structure of classroom discussion and encourage students to engage in high-level thinking and to use multiple sources of knowledge and kinds of reasoning when discussing text.
Dedication

To my parents, my husband and my lovely daughter
Acknowledgments

The dissertation is dedicated to the people who inspired me to read, to talk and to enjoy the beauty of life and literature.

Although many people have contributed to the successful completion of this study, I am most thankful to the endless support from my esteemed advisor, Dr. Ian Wilkinson, who has given himself in long hours discussing with me and reading, commenting, and editing on numerous drafts. I could not complete this dissertation without his close guidance on my inquiry and writing in the field of reading education and classroom discourse analysis. I am also thankful to the advice from my other members of my committee, Dr. Alan Hirvela and Dr. George Newell, for their intellectually supports. Dr. Hirvela inspired me to explore the nature of pedagogical practice in Chinese community school and Dr. Newell spent time on teaching me the patterns of instructional discourse.

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Chapter 1

Introduction

1.1 Rationale

This dissertation examines the participation of one Chinese teacher and five 13 to 15 year-old Chinese heritage students in a classroom in a Chinese community school during group discussions about narrative texts. In this study, the teacher adopted Collaborative Reasoning (CR) (Anderson, et al., 2001) to help the Chinese heritage students extend their discussion repertoires and achieve a deeper understanding of narrative text in the target language, Chinese. The purpose of this study was to explore whether and how CR helped students use discourse features that index their high-level thinking during discussions. This study also explored how the students incorporated what they learned from the discussion into their reading and thus reached deeper understandings of the text.

As the population of heritage language speakers rapidly rises in the United States, the demand for special instruction for heritage language learners is growing (Wright, 2007). Many educationalists argue that, for students who are born in ethnic-minority families, the home languages provide a good medium of instruction in a linguistically-diverse classroom (Schwarzer, Haywood & Lorenzen, 2003; Valdés, 2005). It has been found that classes that are characterized by the use of multiple languages provide more learning opportunities for language-minority students, thus increasing their motivation to participate in the academic activities
taking place in the classroom (Valdés, 2005). Studies exploring the effects of using home languages in the school setting show that using the students’ home languages not only facilitates students’ learning of English but also supports their academic achievement in other subjects (Wright, 2007). Some bilingual educationalists also argue that, for the sake of cultural diversity, it is important to aid these students in maintaining their first languages before these languages are lost in the classroom setting (Schwarzer, Haywood & Lorenzen, 2003).

Moreover, in response to globalization, the US government has recognized the growing need for Americans who are proficient in languages other than English (Wright, 2007). Bilingual or even trilingual Americans have been recognized as important in fulfilling needs in the areas of national security, diplomacy, and international commerce (Brecht & Ingold, 2002; Wright, 2007). The National Foreign Language Center stated that heritage language speakers from indigenous, immigrant, and refugee backgrounds would become the main sources for such multilingual experts (Brecht & Ingold, 2002). The National Foreign Language Center also described these people as the “untapped reservoir of linguistic competence in this country” (Brecht & Ingold, 2002, para. 2). However, even though there is a growing need for heritage language education, the number of studies focusing on heritage language and heritage language learners is relatively small, and the number of studies focusing on Chinese heritage learners is even smaller. The education of Chinese heritage students has received little attention in educational research, as bilingual education and bilingual research in the US has mostly been concerned with English/Spanish programs (Li, 2006a).
Born in a bilingual environment, Chinese heritage students often lack sufficient exposure to the writing system and academic discourse in their home language, even though most of them speak Chinese in their homes (Weger-Guntharp, 2008). By comparing the Chinese language development of heritage students who had a background in Chinese language and culture with those who did not, Xiao (2006) found that heritage learners’ exposure to their oral language in the home did not necessarily contribute to their acquisition of reading and writing skills. She stated that more exposure to written language was needed to promote Chinese heritage learners’ abilities to read and write in Chinese. Xiao’s argument for increasing print literacy was later supported by an ethnographic study of Jia (2009) which explored the language socialization of American-born and China-born children in a Chinese school. Jia also found that the discursive patterns that students acquired from the Chinese teachers’ discourse were significantly related to the students’ learning of Chinese written language (Jia, 2009).

Scholars of Chinese heritage language education argue that there is an urgent need to explore the role of Chinese community schools in contributing to Chinese heritage students’ language development (Weger-Guntharp, 2006, 2008; Wright, 2007). As an important aspect of Chinese language communities, Chinese community schools play a crucial role in preserving the Chinese language and cultural values through education. However, studies of the quality of the instructional practices in Chinese community schools are rare. As a result, scholars in heritage education (Weger-Guntharp, 2008; Wright, 2007) have suggested that the following topics should be addressed in studies of Chinese heritage education. First, studies are
needed to examine the influence of Chinese community schools on the development of students’ print literacy, as being able to read and write in Chinese is considered the most important goal for Chinese heritage learners (Weger-Guntharp, 2008; Wu, 2008). Second, there is a need for more attention to be paid to the role of Chinese heritage language schools in bridging the gap between the “communal language” (language used in different communities, including Chinese and English) and students’ “self-language” development (language as the individual dialect) (Jia, 2006, 2009; Pu, 2008). To achieve this goal, studies are needed to provide rich, thick descriptions of the social communities, including the home, school, and ethnic community settings of Chinese heritage students. Furthermore, studies are needed to address the problem of language attrition (Valdés, 2005).

Prior studies of the discursive patterns in classrooms of Chinese community schools have not shown encouraging results regarding the quality of classroom discourse (Curdt-Christian, 2007; He, 2001; Jia, 2009; Pu, 2008). The findings of these studies indicate that the discourse practices in such classrooms are mostly authoritative and teacher-dominated, consisting mostly of monologue-style lectures and various forms of recitation (Curdt-Christian, 2006; He, 2001; Jia, 2008). Studies carried out by Jia (2008), He (2001) and Curdt-Christian (2006) indicated that the discursive patterns in such classrooms were shaped by the teachers’ learning experiences, their instructional philosophies, and their cultural values. They also showed that the teachers tended to exert considerable authority in controlling students’ turn-taking and interpretation of text. Some scholars have suggested that the discursive patterns that teachers demonstrated in the classrooms might
discourage students from socializing with the language tools in learning Chinese (He, 2001; 2008; Jia, 2009). Discourse in the classroom, including teachers’ direct instruction, private discussions among peer groups, and various kinds of discussions between teachers and students, can scaffold students to read and write in many ways. In the process of discussion, students learn to make meaning from the text that is taught (Applebee, Langer, Nystrand & Gamoran, 2003; Alverman & Hayes, 1989; McElhone, 2009; Murphy, Wilkinson, Soter & Hennessey, 2009). Through the discourse practices in a text-based discussion, students can acquire reading strategies, become motivated to use their background knowledge to decode a text, gain thematic knowledge, understand the different interpretations of a text, and become familiar with the skills required to construct arguments (Anderson & Pearson, 1984; Anderson et al., 2001; Reynolds, Taylor, Steffensen, Shirey, & Anderson, 1982). Therefore, classroom discourse in discussion can have an impact on students’ experiences in learning literacy (Jia, 2006, 2009; Pu, 2008). There are many studies that suggest the quality of classroom discussion influences students’ reading comprehension (e.g., Applebee, Langer, Nystrand & Gamoran, 2003; Almasi, O’ Flahavan, & Arya, 2001; Alvermann & Haye, 1989; McElhone, 2009; Murphy, et al., 2009; Reninger, 2007). These studies have shown that high-quality discussion scaffolds the readers, allowing them to elaborate their understanding of the texts and to exchange ideas through reading, writing and discussion (Applebee, et al., 2003; Reninger, 2007).

To improve the quality of classroom discourse, researchers of Chinese language education have advocated using an open participation structure in Chinese heritage
classrooms to create a more suitable environment for various forms of reading activities (Curdt-Christiansen, 2006; He, 2001; Zhang & Davis, 2008). They have advocated using student-centered curricula and strategies to achieve more balanced power relationships between the teacher and the students (Zhang & Davis, 2008). They argue that students should be permitted to co-construct knowledge with their peers as well as their teachers through the use of language.

To address the need of improving the quality of classroom discourse in Chinese community schools, this study explored the use of CR. CR is an approach to literature discussion that aims to stimulate critical reading and improve students’ engagement with texts. CR also provides opportunities for students to become skilled in argumentation through thoughtful and lively dialogue. During CR, students are encouraged to participate in discussions of controversial issues raised by the texts they read. The students are asked to take a position on a “central question” raised by the story, present reasons and evidence for their positions, and challenge one another when they disagree (Anderson, Kim & Li, 2008). Through the discussion, the students are expected to engage in argumentation by making inferences from the text and their life experience and weighing reasons and evidence raised on both sides of an issue to decide whether to maintain their positions or not.

The main feature of CR is open participation, which means that students do not have to raise their hands and can communicate freely without being nominated by the teacher (Anderson et al., 2001; Reznitskaya et al., 2003). In CR, it is the students who decide when to talk, to an extent, and what to discuss. The teacher interrupts the discussion only when he or she wants to push students to sharpen their arguments or
keep students on topic. In other words, in CR the teacher relinquishes his or her authority in leading discussion to promote students’ engagement. The teacher is identified as a “facilitator” who helps the students to acquire the skills of making reasoned arguments and promotes students’ self-management of turn-taking through strategies of modeling, prompting, clarifying, summarizing, and encouraging (Clark, et al., 2003).

Previous studies of CR have indicated that it is effective in promoting students’ abilities in making reasoned arguments in their oral discussion (Clark, et al., 2003), as well as in their persuasive essays (Reznitskaya, et al. 2003). It has also been shown that CR produces greater student engagement and more extensive use of higher cognitive processes, including elaborating text propositions, making predictions, using evidence, and expressing and considering alternative perspectives (Chinn, Anderson & Waggoner, 2001; Kim, 2002).

CR has several benefits compared to other discussion approaches such as Literature Circles (Short, 1986), Book Club (McMahon, 1992), Grand Conversations (Eeds & Wells, 1989), Instructional Conversations (Goldenberg, 1992/1993) and Philosophy for Children (Lipman, 1975). The principles and steps of CR are comprehensible and easy to follow. Therefore, the teacher does not need to spend too much time preparing his or her students for CR. CR also allows the teacher to combine CR with his or her usual instructional activities to teach short stories. Moreover, CR can be used with short stories that are written in simple language, provided the topics are interesting and engaging. It is therefore well suited for use with heritage students who have limited knowledge of Chinese written language but
greater knowledge of the topics addressed in the stories (see also Kidder, 2008).

Although previous studies of CR have shown the benefits for promoting students’ critical thinking skills in text-based discussion, only one examined the effect of CR in promoting reading comprehension in second language learning (Zhang, 2009). Furthermore, studies of CR have not examined how CR would be perceived by the teacher and the students in a bilingual classroom and the role of the teacher in scaffolding the discussions.

Hence, by implementing CR in a Chinese heritage classroom, this study not only examines the extent to which CR might alter the discursive patterns in the classroom, but also explores the extent of students’ involvement in high-quality discussions after CR is introduced. Furthermore, this study examines changes in students’ reading comprehension of Chinese stories before and after the implementation of CR. This study also examines the teacher’s participation in CR and her perception of the discussions.

The study was guided by the following questions:

**Question 1:** Do the patterns of classroom discourse change after the introduction of CR? If so, how do the discourse patterns change?

**Question 2:** Does the teacher’s participation in discussions change after the introduction of CR? If so, how does it change?

**Question 3:** Do the students’ reading behaviors and strategies change after the introduction of CR? If so, how do they change?

**Question 4:** Do the students’ skills in argumentation change after the introduction of CR? If so, how do they change?
1.2 Significance

This study addresses questions that have rarely been considered in previous research on Chinese heritage education, namely, the quality of discursive practices in a Chinese heritage classroom and students’ literacy learning. This study documents some of the ways in which heritage students might benefit from high quality discussion by employing CR in the classroom. The study assumes that engagement in high-level thinking about texts would contribute to students’ reading comprehension of those texts. This study has important pedagogical implications for teachers seeking to improve the quality of their instructional practices in Chinese heritage classrooms.

1.3 Definitions

1.3.1 Reading: Reading is a sense-making process in which the reader is engaged based on his or her active understandings and interpretation of the text (Snow & Sweet, 2003). The process of interpretation is affected by multiple cognitive and linguistic resources (Guthrie, 2004). Reading is also a social practice. The interaction between the author, the text, and the reader is situated in a socio-cultural context, including the reader’s peers. Students read texts for authentic communicative purposes and their interpretation of a text is influenced by the social context in which the reading occurs (Crosson & Resnick, 2005).

1.3.2 Text-based discussion: Text-based discussion is an instructional activity in the classroom aimed at promoting in-depth understanding of the text, high-level thinking skills, and reading comprehensions. It also facilitates
interactions among student, teacher, and text in a specific cultural and social context (Almasi & Garas-York, 2009). Text-based discussions may be teacher-led or student-led, large-group or small-group discussions. During the discussions, the discussants ask questions about the text, challenge or elaborate other’s statements, and construct the meaning of the text together.

1.3.3 **Collaborative Reasoning:** Collaborative Reasoning (CR) is a discussion format for text-based discussion. In CR, students gather in small group to discuss a central question about a story they have read, and listen to one another think aloud and construct arguments related to this question (Clark et. al, 2003). CR has several characteristics: (1) The main issue being discussed lends itself to multiple perspectives or positions; (2) both the text and students’ experiences are used as bases for consideration of the issues; (3) the emphasis is on understanding students’ positions and how they come to them rather than reaching consensus on an issue or a single interpretation of the text (Waggoner, et al., 1995, p.583). In CR discussion, students participate in the discussion is encouraged, without raising their hands or waiting to be called on.

1.3.4 **High-level thinking:** The term high-level thinking refers to several complex cognitive skills such as evaluating, generalizing, synthesizing and elaborating. People tend to use high-level thinking skills when they are involved in a problem-solving process. In this study, the term high-level thinking is used to refer to critical, reflective thinking about text (Wilkinson,
Soter & Murphy, 2010). Related terms are “literate thinking”, “higher order thinking”, “critical thinking”, and “reasoning”.

Chapter 2

Literature Review

The purpose of this study was to examine the relationship between classroom discussion and reading comprehension in the context of a Chinese heritage language learners’ classroom. Therefore, in this chapter, I briefly discuss the definition of heritage language learner and the characteristics of Chinese heritage language learner. Then I describe the features of high-quality classroom discussions. Finally, I introduce the conceptualizations of reading comprehension and the instructional approaches that promote students’ comprehension of text.

2.1 Heritage Language Learners

In this section, I discuss the definition of heritage language and heritage language learners. Then I provide a brief discussion of the characteristics of heritage language learners. I also review the empirical studies of Chinese heritage learners’ learning experience in Chinese community schools and their learning strategies in reading and writing Chinese.

2.1.1 Defining heritage language and heritage language learners

Although the label of “heritage language” (HL) has only emerged in the past decade, the notion of HL has existed for a long time under various other designations such as “mother tongue” and “home language” and was associated with related concepts such as “circumstantial bilingualism,” “language maintenance” and “language attrition” (He, 2008, p.201). Most literature on HL studies suggests that
consideration of HL and the language teaching of HL students originated with Valdés (1995, 2005) who first questioned the way public school teachers teach minority language (e.g. Spanish) as an academic subject in a multilingual setting. Valdés argued that, for minority students, minority language is not an academic subject outside of their life circumstances. Instead, minority students primarily acquired the minority language from social interaction with their family members. Thus, the principles of teaching minority language as an academic subject might not be suitable for students from immigrant or indigenous linguistic minorities (e.g. students from a Mexican background). Students from linguistic minority groups are usually equipped with more language competencies, ethnic identities, and learning motivations than second language learners. Valdés argued that, as a result, it is essential to differentiate between Heritage Language Learners (HLL) and monolingual students in educational institutional settings. Furthermore, Valdés argued that it was necessary to identify the main types of minority populations and conceptualize the linguistic characteristics of these linguistic minority groups. Valdés believed that conceptualizing the characteristics of ethnic languages was the first step to addressing the diversity of sociocultural and political backgrounds of ethnic and linguistic minorities.

In fact, the task of defining Heritage Language Learners (HLL) was arduous because of the complexity of learning experiences that heritage students encountered in different environments such as their homes, schools and communities (Carreira, 2004; Kondo-Brown, 2003, 2008; Valdés, 2005). Hence, studies on heritage education had different perspectives in defining HL and HLL. These studies define
HLL in terms of aspects as varied as language competency, ethnic/linguistic identity, and sociocultural/political backgrounds (Kondo-Brown, 2003). Generally speaking, however, the most widely-used definition was that proposed by the UCLA Steering Committee (2000), which emphasized the importance of the pedagogical agenda in the HL field:

_The term “heritage” speaker is used to refer to a student who is raised in a home where a non-English language is spoken, who speaks or merely understands the heritage language and who is to some degree bilingual in English and the heritage language_ (UCLA Steering Committee, 2000, p.335).

As for the term “Heritage Language,” the most acceptable definition came from the Linguistic Society of America (LSA) Bulletin in the University of California, San Diego which placed emphasis on the role of the cultural and ethnic backgrounds of HL speakers (Chinen & Tucker, 2005):

_The term “heritage language” denotes a language other than English that is associated with an individual’s ethnic or cultural background and a “heritage speaker” is someone who speaks or understands a language._

However, some studies indicated that there are alternative definitions of HLLs. Some researchers argued that the linguistic proficiency of the heritage language and the home background should not be the only consideration in defining HLLs (Carreira, 2004; Kondo-Brown, 2003/2008). Valdés later revised her definition of HL and claimed that “it is the historical and personal connection to the heritage language that is salient and not the actual proficiency of individual students.” (Valdés, 2005, p.411). Kondo-Brown and Carreira also suggested that the degree of connection between the heritage culture and self identity should be the most important indicator of HLLs.
Kondo-Brown explained that “from the personal perspective of an individual learner, whether or not the ones view themselves as the HLL might depend on the ethnic identity that one established.” (Kondo-Brown, 2003/2008, p.11). Carreira also criticized the definition of HLL proposed by the UCLA Steering Committee, claiming that it ignored the differences that existed in the social networks in which the language was used and the way that people identified themselves in the language communities. Carreira argued that HLLs should be defined as “students whose identity and/or linguistic needs differ from those of second language learners by virtue of having a family background in the heritage language (HL) or heritage culture (HC)” (Carreira, 2004).

By adopting the notion of language socialization, Carreira (2004) argued that it is the membership of the language learner in the HL community, rather than the language proficiency in HL, that should be considered as the indicator of HLL. According to Carreira, the various definitions of HL in current studies can be classified according to the following categories: (a) the learner’s place in the HL community, (b) the learner’s personal connection to the HL and HC through his/her family background, and (c) the learner’s proficiency in the HL. She further explained that the three categories listed above implied different degrees of personal connection to the language communities. For instance, in the first category, the ethnic community was considered the key element of HLL status. The language learner was viewed as “the member of a community with linguistic roots in a language other than English” (Carreira, 2004). Carreira labeled the kind of HLLs in the first categories, in which language learning took place in the context of the
HL/HC community, as HLL1s. According to Carreira, most HLL1s had strong heritage and cultural/language identity and were striving to reverse the intergenerational language shift in the host country (see also Chevalier, 2004).

The HLLs that are connected to the HL community only through their family or ethnic background were labeled as HLL2s, since they were not active members of HL/HC community (Carreira, 2004). Compared to the HLL1s, who were already the “insiders” of HL community, HLL2s were sometimes considered the “outsiders” of the communities. However, although HLL2s did not directly participate in the HL/HC community, they were motivated to build the emotional connection to their HL/HC community. Hence, they perceived learning their HL as the means of fulfilling their needs in terms of constructing their ethnic and cultural identity.

According to Carreira (2004), the definition of HLL3 is derived from the proficiency-based definition proposed by Valdés (2000, 2001) and the UCLA Steering Committee (2000). This category included those who have some language skills that were inherited from their home background, regardless of whether or not they were willing to be part of the HL/HC community. Carreira (2004) argued that the third category was the most restrictive one since people who did not consider themselves HLLs might also be included in this category. Based on Carreira’s definition, students who had some language skills in HL but did not consider themselves HL speakers are ranked as HLL4s. She explained that even though HLL4s might be familiar with the linguistic features of the HL, they had little or no knowledge of the HC and had no motivation to acquire membership of the HL community.
In summary, the definition of HLL proposed by Carreira (2004) addressed the membership that HLLs hold in the HL community. Carreira’s definition was later echoed by He (2008), who also argued that the question of identity formation of HLLs was deeply influenced by their participation in the HL community.

2.1.2 Characteristics of heritage language learners

Although bilingual, heritage language learners are not necessarily fluent in using their first and second language. Pu (2008) stated that most heritage speakers “are unable to benefit from the documented economic and academic advantages available to those with dual language proficiency” (p.29). Many studies have indicated that heritage language learners suffer from intergenerational language attrition because the language skills that HLLs experienced in their host language were stronger than those in their heritage language (Kondo-Brown, 2003). Moreover, studies have shown that some heritage language learners had negative attitudes toward their heritage language because of the unpleasant experience associated with using their heritage language in school and family environments (Valdés, 2005). The negative attitude towards learning the HL could also be caused by the problem of language attrition, the loss of their family language. Therefore, research on HLL was entangled in the relations between the different contexts of language use (i.e. the school program, the family, the community, and the broader sociopolitical circumstances) and the linguistic needs that drove HLLs to learn their heritage language. These particular circumstances differentiated HLLs from first language (L1) learners and second language (L2) learners (Carreira, 2004; Kondo-Brown, 2003; Lynch, 2003; Valdés, 2005) but placed them on the continuum of L1/L2
development (Valdés, 2005).

On the one hand, drawing from sociolinguistic theories, Valdés (2005) further explained that the Heritage language speakers as L1/L2 users did not have the same opportunities to acquire the different genres, registers and language patterns that monolingual speakers did even though they lived in a bilingual circumstances. She argued that L1/L2 speakers used different languages in different social contexts and acquired limited communicative patterns due to their exposure to restricted social contexts (for instance, Spanish at home with family members, English at school with teachers and classmates). Valdés named the different communicative genres that HLLs used and acquired in different contexts “contact varieties”. She also noted that the limited exposure to speech genres in social communities could prevent HLLs from achieving native-like language competence. To better understand the problem of language attrition, Valdés proposed that, to better portray the Heritage language speakers’ L1/L2 language development, further studies will need to examine the relationship between communal languages (languages used in different communities) and the I-language (language as the individual dialect).

On the other hand, based on the notion of language socialization, He (2008) argued that language learning is not only the process of language acquisition but also the process of language socialization. As stated above, He claimed that one of the tasks of HL language studies is to illustrate how the language learner was socialized to become a part of the community by means of language use (He, 2006). He also proposed that the HL and HC should go hand in hand in socializing HLLs. He proposed the main focus of studies on language socialization should be the situated
identities of HLLs, which were formed in social interaction and communal activities

2.2 Chinese Heritage Language Learners

In this section the characteristics and problems of Chinese heritage language learners, as well as the Chinese community school in the United States are discussed.

2.2.1 Characteristics of Chinese heritage language learners

Chinese Heritage Language Learners (CHLLs) are students/learners whose family language is Chinese. Studies on CHLLs have mainly focused on CHLLs’ identity formation and the influence of social contexts in CHLLs’ language learning processes.

With repeat to the identity formation in CHLLs, researchers have drawn from a variety of theoretical frameworks to discuss the relationship between identity formation and students’ motivation. These studies have adopted the theory of integrative and instructional motivations (Gardner, 1991), the process-model of Dörnyei (1994), and the investment theory of Norton Peirce (1995), to explain their results. For example, a study by Yang (2003) adopted Gardners’ theory to examine the motivational orientations of HLLs in East Asian language classes. The findings indicated that the Chinese, Japanese and Korean heritage language learners were mostly influenced by integrative motivation, which meant that their purpose in learning the heritage language was to maintain their status in the HL community. For Yang, this finding confirmed the results of a previous study (Chao, 1997) which proposed that the formation of ethnic identity and the level of communicative competence highly influenced students’ attitudes towards the HL, especially in the
case of Chinese and Japanese students. However, she also found that unlike Japanese and Korean students, Chinese students were more likely to learn their language for instrumental reasons such as for academic and economic investment.

The results from Yang’s (2003) study are similar to the findings from a study by Weger-Guntharp (2006/2008) who compared the motivations of CHLLs and non-CHLLs at the college level. In the study, Weger-Guntharp adopted process-oriented model and investment theory. According to Weger-Guntharp, the process-oriented model is concerned with issues relating to the teacher-student relationship, student-student group dynamics and classroom environment, whereas the theory of investment emphasized the relationship between language learning and the learners’ social identities.

Weger-Guntharp (2006/2008) illustrated the dynamics of identity formation in his ethnographic research and concluded that the motivations of CHLLs reflected three main aspects: perception of self, perception of peers, and perception of teachers. In terms of perception of self, Weger-Guntharp argued that many CHLLs experience an emotional connection to their home countries. Thus, learning Chinese is an important way for them to construct their cultural identity. However, beyond cultural identity, economic and academic goals also served as motivations for CHLLs to learn Chinese. In the classroom setting, CHLLs had higher expectations of themselves about learning Chinese compared with their non-CHLL peers, because teachers and their non-CHLL peers expected them to perform “better” in language skills in their language classes.

The social contexts that CHLLs lived in also have drawn attention in the field
of HLL. Studies conducted by Li (2003, 2004, 2005, 2006a, 2006b, 2007) found that, because CHLLs students were stereotyped as “higher achievers” in school, and due to the myth of “model minority” (Clark & Gieve, 2006; Zhou & Kim, 2006), their learning problems were usually overlooked. Li’s studies involved low- and middle-class families and students labeled as “at-risk” learners. She also found that many CHLLs suffered academically due to the mismatch between family discourse and school discourse in literacy practices (Li, 2003/2004). For Li, the discontinuities between family and school discourses of learning could be conceptualized in terms of the following points: (a) what it means to be literate, (b) the role of schooling, and (c) the meaning of special needs children (Li, 2003). Since the traditional values of Chinese culture emphasized school as a place that encouraged disciplinary and individual efforts on acquisition of print literacy, Chinese parents seldom agreed with the way in which public school teachers educated their children (Li, 2003). They also tended not to accept their children being labeled as “struggling learners” or “at-risk learners” by the educators. The parents sometimes considered that such labels were not only insulting to their children but also a way for schools to deny the responsibility of helping their children (Li, 2003). The Chinese parents did not believe that children were “born smart,” but thought instead that children would become “smart” if they are adequately supported by teachers. The incongruence between the school’s culture and the home culture might make teacher-parent communications problematic and present cultural discontinuities between the home and school settings. Li (2004) explained that these cultural discontinuities resulted in different teaching strategies being used in school and at home, different
interpretations of the roles of homework and instructional materials, and insufficient recognition of the role that heritage language played in helping students’ subject learning.

Li (2006b) argued that Chinese parents believed that they had important roles to play in their children’s academic success and thus, like Caucasian parents, usually actively engaged their children in different literacy activities. However, unlike Caucasian parents, Chinese parents more often directly intervened in their children’s schooling and learning experiences. Chinese parents who had experienced schooling under the influence of Chinese culture were more likely to make their children practice the basic skills of reading and writing, complete assignments, and perform other decontextualized, drill-based training activities (Li, 2007; Jia, 2009). Rather than motivating their children to engage in critical thinking, Chinese parents preferred their children to demonstrate memorization, recitation, and correction strategies in vocabulary learning and sentence construction.

2.2.2 Problems experienced by Chinese heritage language learners

Some studies have addressed the problems that CHLLs experience, especially problem of learning to read and write (Bernhardt, 1986, 1991; Everson & Ke 1997; Kondo-Brown & Brown, 2008; Pu, 2008). Due to its complex language structure, Chinese written language can be difficult to learn even for the native speakers. To some heritage speakers whose first language is not Chinese, learning Chinese written language can be especially challenging. Pu (2008) summarized several features of Chinese written language and explained why learning it can be so difficult for English speakers.
First, learning Chinese visual-orthographic characters is different from learning the English alphabetic-orthographic system. Chinese characters are formed by interwoven strokes that are usually combined to form common radicals, which are the elements of a compound Chinese character. A compound Chinese character usually consists of two kinds of radicals, semantic radicals and phonetic radicals. The semantic radicals provide meaning cues for the whole character. For example, the character “木” (the wood) is usually adopted as a semantic radical that provides a meaning cue for a woody plant. For example, “木” is used to cue that the character “梅” (plum tree) contains the meaning of “woody plant.” And the character “梅” is also cued by its right-hand radical “木”, which serves as its phonetic radical. As a result, the character “梅” is cued by both its semantic radical “木” and its phonetic radical “木”. The configuration and position of phonetic radicals and semantic radicals can change the meaning of the words. For example, even though the two characters “呆” and “杏” are both formed by the radicals “口” (mouth) and “木” (tree/lumber), the character “呆” means “dull” but the character “杏” means the fruit, apricot. These complicated rules of forming radicals make it difficult for learners to learn the Chinese characters.

Second, Pu (2008) explained that Chinese is a topic-prominent language, as compared to English which is a subject-prominent language. This difference influences the language structure of sentences. In Chinese sentences, the topic always comes first and the subject is less important. Thus, sometimes in Chinese language, the subject may be omitted. Moreover, the Chinese language is
non-inflective and lacks articles (i.e. “a,” “an,” and “the”). The difference in language structures may cause difficulties for Chinese language learners in acquiring written discourse.

Third, the standard Chinese language (Mandarin) can be represented by two systems. One is Chinese characters (Hanzi), a logographic system, and the other is Pinyin or Zhuyin, a supplementary phonetic system which is used as a guide for pronunciation. However, unlike English, which has a relative clear orthographic-phonology mapping system, there is no grapheme-to-phoneme correspondence in Chinese (see also Yun, 2006). As a result, mastery of Pinyin or Zhuyin does not necessarily help students master the written language (Pu, 2008).

Fourth, the weak connection between the phonetic systems and logographic systems highlights the heterogeneous nature of Chinese oral languages. “Chinese” is a broad term which refers to the different dialects of Wu, Xiang, Gan, Min, Cantonese, Hakka, and Mandarin, and people who speak different dialects all use the same written language and develop their own pronunciations of the Chinese characters based on their dialects. This makes speakers of different dialects capable of communicating with each other via written language, but not oral language. Moreover, discourse norms and lexicons in the dialects also affect how speakers use Chinese written language to read and write (He, 2006). Thus, it is hard to define standard “Chinese” written language in literacy practice. Many studies of the oral language proficiency of Chinese heritage students note that the origins of heritage students determine which dialect they use in their home settings. The fact that they use different dialects in their home settings can cause difficulties for Chinese
heritage students learning standard Mandarin, the official language in P. R. China and Taiwan (Kondo-Brown & Brown, 2008).

Research on second language (L2) reading strategies, especially reading Chinese texts, is very limited. However, there are some studies that shed light on the process. Everson and Ke (1997), drawing from Bernhardt (1986, 1991), conceptualized the L2 reading processes for learners of Chinese as a foreign language by mapping the factors that affected the reading process of L2 language. As Bernhardt pointed out, there are several text-driven and conceptually-driven factors that interact with each other in L2 reading. The text-driven factors include word recognition, or the assignment of meaning to words either through translation or inference; phonetic/figure decoding, which involves the proper matching of the spoken language with its figure equivalent; and syntactic feature recognition which involves the correctly established relationship of words and sentences. The conceptually-driven factors include intratextual perceptions, or how different parts of the text are integrated into a coherent discourse structure; prior knowledge, or the application of world knowledge that facilitates or hinders text comprehension, and metacognition, the reader’s reflection and monitoring of how well he or she makes meaning from the text.

Everson and Ke (1997) added one more factor, orthographic layer of difficulty, to the word recognition component in Bernhardt’s model (1986, 1991). This factor is especially relevant for students of Chinese language (see also Lee-Thompson, 2008, p.705). Everson and Ke argued that knowledge of Chinese morphology was highly related to students’ reading proficiency. They stated that most learners had difficulty
isolating meaningful word units in the text, indicating that they lacked the ability to parse constituent units in authentic Chinese texts. They further indicated that knowledge of Chinese morphology significantly predicted the level of reading proficiency. Everson and Ke found that proficient readers in Chinese had a well-rounded “character network” -- the knowledge of radicals and their combinations. Their “character network” effectively helped them to develop the strategy of “guessing” word meaning by making inferences from the radicals of unknown characters. Their findings also indicated that that the visual and semantic processing of orthographically unfamiliar words was important in learning Chinese characters.

Some studies have adopted the model of reading process in Everson and Ke (1997), and conducted think-aloud tasks with English-speaking learners. Lee-Thompson (2008), for example, conducted a study in which eight American undergraduate students participated in think-aloud and retelling tasks to reveal their strategies in reading a Chinese text. In the study of Lee-Thompson (2008), the students’ reading strategies were grouped into two categories: bottom-up strategies, and top-down strategies. The bottom-up strategies were primarily used to help solve difficulties in comprehension of smaller units, such as characters, words, phrases or sentences; and the top-down strategies were used to integrate information to gain a holistic understanding of large students’ portions of the entire text or to monitor reading processes. Findings revealed that reading difficulties were mainly caused by a lack of Chinese vocabulary. Other factors included Chinese grammar (see also Elder & Manwaring, 2004), and orthographic and background knowledge.
Lee-Thompson found that students applied mostly bottom-up strategies to solve word-level difficulties. Furthermore, because of the difficulties readers experienced in segmenting the word units, the lack of an alphabet and spaces between words also made the reading task difficult. Lee-Thompson also found that knowledge of sentence patterns was also crucial for students to correctly interpret the meaning of sentences. A lack of background knowledge and cultural schema was another leading cause of reading difficulties.

Winke and Abbuhl (2007) conducted a study that utilized think-aloud methods to investigate the strategies that learners of Chinese as second/foreign language used in learning vocabulary. Their findings indicated that the students derived support from the phonetic system while learning Chinese characters. Most students used strategies to memorize the visual script along with its pronunciation. They realized that sometimes the pronunciation of words made the word character more “unique” and thus more easily memorized. Like Everson and Ke (1997), their findings also indicated that “guessing” strategies were effectively and widely used to solve reading problems.

Some studies have examined whether students’ knowledge of oral language influenced their learning of the Chinese written language. For example, Ke’s (1996) study focused on the relation between knowledge of the dialects and Chinese vocabulary knowledge. Ke investigated the knowledge of Chinese vocabulary of different language groups by conducting a Chinese character test with Mandarin Chinese speakers, Cantonese speakers, and non-Chinese speakers. Ke found no statistically significant differences between the users of different dialects
In a similar vein, Xiao (2006) surveyed the language abilities of CHLLs and non-CHLLs through the standardized Chinese SAT test. Xiao found that even though CHLLs performed better than non-CHLL classmates in areas of listening and speaking, the CHLLs did not perform better than their non-CHLL peers in reading comprehension, vocabulary, and character writing. Xiao suggested that CHLLs might have more experience using spoken language in authentic language circumstances but their knowledge of oral language does not necessarily support them in their development of print literacy. Thus, the CHLLs derived no benefits from their phonological familiarity with Chinese language in learning reading and writing.

2.2.3 Chinese community schools

Community schools that serve ethnic minorities play an important role in forming the cultural identities of heritage students. Shi and Lu (2007) suggested that Chinese community schools were one of the “cultural spaces” that transmit cultural values across generations, thus helping help heritage students to form their cultural identities. Shi and Lu argued that culture was a product of the particular spaces that people inhabited and which influenced how heritage speakers thought of themselves and others. In their study, Shi and Lu interviewed Chinese American adolescents and young adults to explore their stories of identity formation and their relationships with language development. The results of their study suggested that cultural spaces, such as the home and Chinese community school, were essential in motivating heritage speakers to learn and use Chinese. Shi and Lu argued that Chinese schools “served as contested zones to compete with the dominant ideology and social pressure of
speaking the dominant language” (p.328).

Chinese community schools date back to the late 1880s in the United States, the period which saw significant levels of immigration of Chinese laborers (Chao, 1997; Zhou & Li, 2003). To serve the needs of those early immigrants, classes in Cantonese (one of the dialects of Chinese) were delivered to the residents of Chinese neighborhoods in a number of large US cities. Later, in 1905, several formal Chinese community schools were established in San Francisco, funded by the emperor of the Ching Dynasty. Other similar schools were later established in New York and Chicago (Chao, 1997). Due to the Chinese Exclusion Act of 1882, Chinese community schools sought to preserve language and cultural heritage for America-born descendents and provide opportunities for children who were not permitted to attend public schools. Chinese community schools were also the only ethnic institutions serving children and had no connection to public education (Zhou & Li, 2003). Parents sending their children to Chinese community schools wanted their children to be educated in the Chinese cultural values and Chinese language because they believed that their children would either return to China or find a job in Chinatowns.

In 1943, the Chinese Exclusion Act was repealed, allowing immigrants to legally participate in American society. As a result, between World War II and the 1960s, Chinese community schools experienced a period of decline due to the pressure of assimilating into the mainstream culture (Lu, 2001; Zhou & Li, 2003). However, after the 1970s, Chinese community schools started to provide a more comprehensive system of supplementary education (Liu, 2006; Zhou & Li, 2003;
Zhou & Kim, 2006) and began to thrive rapidly again. According to Zhou and Li (2003), these schools sought to “assist immigrant families in their efforts to push their children to excel in American public schools, to get into prestigious colleges and universities, and to eventually attain well-paying, high-status professions that secure a decent living in the United States” (p. 65).

Chinese schools were mainly funded by student tuitions, the nonprofit ones were also supported by donations from parents, various communities, or the Taiwanese government. The schools were considered as close part of the community. Heritage language schools were expected to provide supplementary services to students in addition to their formal school time. According to Zhou and his colleagues (Zhou & Li, 2003; Zhou & Kim, 2006), however, some Chinese community schools have recently shifted to a more comprehensive curriculum system which not only prepares students to acquire basic communicative skills in the Chinese language, but also prepares them for Chinese language tests (the SAT II Chinese language test). The schools also provide a variety of tutoring programs in English, social studies and math and a variety of extracurricular programs such as dancing, chorus, drama, Chinese painting, calligraphy or martial arts (Zhou & Li, 2003; Zhou & Kim, 2006). Generally speaking, three types of programs are offered in the schools: weekend, afterschool and summer (Chao, 1997). In “weekend programs,” classes are held for three hours on Friday evenings or on Saturdays or Sundays. In “afterschool programs,” classes are held in public schools from 3:00 to 6:00 p.m. on weekdays. In “summer programs,” classes are held three hours or more each weekday. The summer program usually lasts for 6 to 8 weeks.
According to Chao (1997) and Lawton and Logio (2009), in most of the Chinese community schools, the students were differentiated by their ages, levels of language proficiency and home backgrounds. Among these factors, language proficiency was the most predominant one. For instance, Lawton and Logio conducted a survey in a Chinese community school run by Taiwanese immigrants. They found that the school provided a dual-set curriculum for the heritage students, in Track A, and for non-heritage students, in Track B. The heritage students in Track A were those students that “have some level of oral Mandarin proficiency, either because they speak it at home or have had immersion by living a place where Mandarin is the primary language” (Lawton & Logio, 2009, p. 138); the non-heritage students were those “from non-Mandarin speaking families that may have one or no parents of Chinese origin (the parent who is Chinese may speak a dialect but not Mandarin), or students born in China who have been adopted into non-Chinese families” (Lawton & Logio, 2009, p. 138).

In contrast to the comprehensive curriculum systems that the Chinese community schools provided to the students, the teaching styles and materials in Chinese community schools were mostly unchanged and usually failed to meet the students’ needs. Liu (2006) stated that Chinese community schools faced difficulties in helping students maintain their ethnic language for several reasons. First, the schools often failed to pay enough attention to the bilingualism of the children and failed to detect students’ emotional resistance to learning Chinese (see also Wang, 1995). Most of the heritage students in the Chinese community schools had little access to their primary language and they only had about 2 to 3 hours per week to
learn Chinese. So they considered learning Chinese was a useless endeavor/activity. Moreover, some parents and children considered that learning English should be the top priority and most of the heritage students refused to use the Chinese language in social contexts for pragmatic reasons (see also Shi & Lu, 2007). Second, there was little or no connection between Chinese community schools and public schools. Most of the teachers in Chinese community schools knew little about the students’ learning experiences in the public schools and almost none of them were educated in K-12 systems in the United States. As a result, the curriculum designs in Chinese community schools always reflected a mismatch of cultural norms and cultural values between the Chinese community and mainstream society (see also Wang, 1995).

Chinese community schools also experienced difficulties in terms of the teachers’ professional developments, resources, and instructional materials. First, most teachers in Chinese community schools receive education in P. R. China, Taiwan or Hong Kong. They either did not have teacher certificates or were not specialized in education or Chinese language. Second, resources for teaching materials were also limited or inappropriate. Wang (1995) argued that most of the teaching materials did not acknowledge the bilingual backgrounds of these students but treated their readers as native Chinese speakers. Even though some teachers tried to improve their teaching by designing their own teaching materials, they were usually constrained by the lack of resources and expertise.

Some studies have also investigated how Chinese heritage language learners develop Chinese literacy in community schools (Jia, 2006; Pu, 2008; Wang, 2004).
For example, Wang found that teaching and learning to write Chinese characters (Hanzi) had become the main goal of the content-driven curriculum. She stated that “language instruction frequently became a coding and decoding activity” (p.315). Classroom activities might include radical and stroke order analysis, phrase and sentence making in Hanzi, recitation, and translation. The learning outcomes were assessed in terms of reading or writing fluency—in other words, how fluently the students could read and write Hanzi—even though students did not feel the need to read and write Hanzi in their daily life.

Another reason that caused students’ resistance in learning Chinese was the cultural values that are propagated in the Chinese community schools. Many studies have shown that heritage language schools tend to emphasize the cultural knowledge that is valued in the home countries (e.g., the cultural values in P. R. China) (Curdt-Christiansen, 2006/2008) and the cultural norms that were preferred by teachers and parents (Curdt-Christiansen, 2006, Jia, 2009; Liu, 2006; Chou, 1995), but not the value systems preferred by the students and their public schools (Li, 2003/2004; Wang, 1995). Studies conducted by Jia and Curdt-Christiansen found that Chinese parents and teachers in Chinese community schools hold a congruent view of socializing the children in Chinese traditional cultural values. For example, Curdt-Christiansen (2008) found that the textbooks that the heritage language schools used emphasized cultural and moral themes such as filial piety, perseverance, diligence, patriotism, conformity, moderation, and altruism. These moral principles were instilled by means of reading Chinese historical stories. The parents and teachers all believed that the students should acquire these cultural values as
resources to perform “appropriate behavior” in the social world. Researchers also found that the cultural norms that were most advocated in the heritage language classroom were silence, diligence and obedience and that the schools usually endowed teachers with higher authority than those in public schools (Curdt-Christiansen; 2008; He, 2006; Li, 2003/2004; Wang, 1995).

These cultural and moral values were not only viewed as the foundation for children to “behave appropriately” in the social world, but were also viewed as the foundation for achieving academic and career success. Didactic stories that sought to promote moral behavior tended to imply that the best way to be virtuous is to work hard and become an educated individual. The connection between traditional Chinese morality and the goal of individual success has became the central issue of both home and school education, thus reinforcing the belief in the importance of socializing children in traditional values by attending community schools.

The cultural forms of obedience encouraged by the Chinese community schools also influence the patterns of discourse that used in the classroom setting, as those discursive patterns were also influenced by the teachers’ learning and teaching experience in their home country. Curdt-Christiansen (2006) found that teachers who were educated in China were socialized in a culture of “teacher as transmitter” (Curdt-Christiansen, 2006, p.204). Thus, these teachers usually conducted teacher-centered instruction and used Initiation-Response-Evaluation patterns to elicit responses from students (c.f. Jia, 2009). Li has also found that some teachers emphasized the use of recitation in the classroom setting and considered this strategy as the primary mean for students to gain a better understanding of the text.
The results of Curdt-Christiansen (2006) and Jia’s (2009) studies confirmed the results of He (2001), who found that students in Chinese language classrooms were educated to use communicative patterns in which they were expected to draw inferences from other interlocutors without questioning or confronting the previous utterances. He also found that the teacher was the only person who had the power to freely reformulate or clarify questions and interpret students’ utterances, thus making the teacher’s voice and the students’ voices “unequivocal” in the classroom.

In sum, the issue of teaching Chinese to the CHLLs involves many different considerations, including ethnic identity, social mobility, family environment and bilingualism. The discursive patterns adopted in classes in Chinese community schools are influenced by the cultural values held by the teachers and the parents. Chinese teachers have faced difficulties helping their students to learn Chinese because of limited insufficient institutional assistance.

2.3 Research on Classroom Discourse

In this section, I discuss research on classroom discourse by referring to relevant empirical studies and their theoretical frameworks. As mentioned above, reading comprehension can be influenced by the quality of classroom discourse. First, I address the characteristics of high-quality classroom discourse. I introduce the coding systems of Nystrand (1991, 1997) and Marshall, Smagorinsky and Smith (1995) to identify the features of productive dialogue, that appear to foster students’ thinking and learning. Next, I discuss studies of high-quality text-based discussion to illustrate the relationship between classroom discourse and students’ reading comprehension.
2.3.1 Characteristics of productive classroom discourse

What kind of dialogue is considered to intellectually support students’ constructions of knowledge? Answers to the questions can be found in Nystrand’s studies (Nystrand, 1991, 1997), who proposed that a good discussion should provide opportunities for students to participate in the co-construction of discourse. Nystrand’s studies were rooted in the notion of dialogism (Holquist, 1990). He developed a coding system that identified to what extent a teacher opens the floor to students’ utterances. For Nystrand, the more opportunities students had to participate in the creation of classroom discourse, the richer their responses would be. Conversely, if classroom discourse was tightly controlled by the teacher and no space was provided for students’ voices, students may behave passively in classroom discourses.

The discourse that Nystrand advocated is “dialogic discourse” (Nystrand, 1991, 1997). Adopting Bakhtin’s concept of dialogism (Holquist, 1990), Nystrand explained that dialogic discourse featured “unprescripted exchange of students’ ideas in the absence of test questions” (Nystrand, Gamoran, Zeiser & Long, 2003, p.137). He also proposed that “classroom discourse is dialogic to the extent that the participants expand or modify the contributions of the others as one voice refracts another” (Nystrand, Gamoran, Zeiser & Long, 2003, p.139). According to his view, highly controlled, prescribed classroom discourse or the discourse of recitation is “monologic discourse,” which featured an “asymmetrical organization” of different voices. He also referred to Bakhtin to characterize an asymmetrical organization as “a nonproductive monologism” (Nystrand, Gamoran, Zeiser, & Long, 2003, p.139)
because it discouraged the exchange of ideas between interlocutors. According to Nystrand’s understandings, I illustrate the role of classroom discussion and the relationship among different voices in Figure 2.1.

![Diagram](image)

**Figure 2.1** Nystrand’s (1997) model of the Relationship between Voices and the Role of Classroom Discussion

In dialogic discourse, every voice has its meanings, purposes, and concerns and that the role of classroom discussion is to provide a space in which each voice has an equal opportunity to participate and respond to other voices. During dialogue, it is inevitable that tensions and conflict emerge. However, the teacher should allow this to occur because it is a way to foster mutual understandings and genuine interactions (Nystrand, 1997). Through such dialogue, students not only participate in the production of knowledge about the text but also reframe their own understanding of
the text. It should be noted that Nystrand treated the text as one of the voices that contributed to the dialogue and the co-construction of knowledge.

Nystrand (1997) argued that the patterns of question-answer exchanges between students and teachers played a key role in excluding or inviting students’ voices into the discussion. He argued that the best way to identify whether or not dialogic instruction was practiced in a classroom was to identify what kinds of questions were being asked by the teacher or students, how students responded to questions and how the teacher evaluated the responses. Thus, his coding system focused on the questions that teachers and students asked in the classroom. According to Nystrand (1997, 2003), a question can be coded in terms of:

(a) Authenticity: Nystrand (1997) stated that a good question would be a question that assumed an unprescripted answer and allowed the answerer to have power to control the flow of the discussion. By contrast, “test questions” allow only one right answer and.

(b) Uptake: Uptake occurs where the conversant incorporates information from the previous answers of other interlocutors into their own questions. Nystrand argued that the use of uptake facilitates the negotiation between conversants because it encourages the conversant to listen to and respond to each other appropriately. Nystrand and Gamoran (1991) stated that the utterances that take up previous answers would either quote previous utterances or use a pronoun (e.g. What do you mean?). Uptake may also be characterized by ellipsis (e.g. Why? How?). Nystrand and Gamoran explained that the purpose of uptake was to recognize and develop students’
contributions. Thus, questions that involve uptake must incorporate previous answers from students, not the questions or remarks by the teacher him/herself.

(c) Cognitive level: The cognitive level is the level of cognitive function that the questioner elicits from the responders through questions. The way to evaluate the cognitive level of question is to determine the cognitive functions of the responses that are elicited by the question.

(d) Level of evaluation: This refers to the teacher’s evaluation of students’ responses. Nystrand and Gamoran stated that in high-level responses, the teachers’ “certified the student’s answers and work it into the fabric of the exchange of discourses” (Nystrand, Gamoran, Zeiser, & Long, 2003, p.146). In other words, when the teacher’s response is high-level, the students “get the floor” in the dialogue. The operational criteria of high-level questions are (a) the teacher’s certification of the response and (b) the teachers’ incorporation of the response in the form of either an elaboration or a follow-up question.

Nystrand and his colleagues also stated that “in our studies, we code not questions per se but rather the interaction surrounding the questions” (Nystrand, Gamoran, Zeiser, & Long, 2003). Thus, the criteria for the authenticity and the cognitive level of questions do not relate to features of the questions alone. Instead, researchers focus on how the questions function to influence the flow of the discussion. As a result, the kinds of instructional activities, the responses that questions elicit, and the intentions of the askers are also taken into account in the
process of coding the questions. For example, Nystrand explained that to accurately
code the authenticity of teachers’ questions, the researchers should not only take
cues from the questions themselves or the responses that the questions elicit, but
also how the responses are evaluated. As for the cognitive level, this is coded
according to the answers that the questions elicited, not the questions themselves.

Another coding system that can be used to identify productive classroom
discourse is one created by Marshall, Smagorinsky, and Smith (1995). Their system
was based on reader-response theory of Rosenblatt (1938, 1969). They adopted the
notions of “reading as a constructive process” and “reading as a transactional process”
from Rosenblatt (1938, 1969) and considered “the process of reading as a transaction
between the language on the page and the purposes, expectations, and prior
knowledge of the readers” (Rosenblatt, 1969, p.2). Marshall, Smagorinsky, and
Smith argued that the purpose of discussion was to help the reader shape the
transactional relationship between the reader and the text. The reading process and
the role of classroom discussion in Marshall, Smagorinsky, and Smith (1995) can be
illustrated as follows:
The work of Marshall, Smagorinsky, and Smith (1995) focused on the analysis of the participation structures that teachers promote in their classrooms. On the one hand, they stressed the agency of the readers in transacting with the text actively, while on the other hand, they suggest that the participation structure in the classroom might influence the readers’ cognitive development. Marshall, Smagorinsky, and Smith also drew from the theories of Vygotsky (1978), Wertch (1991), and other neo-Vygotskian theorists to explain the relationship between language and thinking. They argued that language was the mediator of learning. They also stated that students would internalize the cultural norms, patterns of thought and cultural values prevalent in a social context in order to communicate with each other appropriately and to construct their knowledge.

Marshall, Smagorinsky, and Smith (1995) argued that the communicative patterns that students internalize are the privileged “speech genre” (Bakhtin, 1986) in
the classroom. Their definition of speech genre originated from Bakhtin (1986) who suggested that speech genre is “the syntax, vocabulary, focus, tone and other characteristics of spoken language that signals a discourse community’s norms, epistemology, ideology, and social ontology” (p.14). Marshall, Smagorinsky, and Smith assumed that, in the context of schooling, it was the teacher who decided what kind of speech genre was favored in the classroom and that privileged genres would be internalized by the students when they participated in literature discussions. As a result, one of the purposes of their research was to discover the specific pattern of discourse that was privileged in the classroom and to understand how it was internalized and used by the students. The other purpose of their research was to determine if the patterns of discourse that were privileged by the teachers would facilitate the students’ literary understanding and cognitive development.

The coding system proposed by Marshall, Smagorinsky, and Smith (1995) can be used to identify the linguistic functions, the knowledge bases, and the kinds of reasoning manifest in each utterance. They conceptualized seven kinds of intellectual content and used them in categorizing the knowledge sources of participants’ utterances:

(a) Personal-autobiographical information (drawn from the speakers’ own experience)

(b) Text (information drawn from the text under study)

(c) Text-in-context (information about the author of the text, the historical period in which it was written, or its genre)

(d) General knowledge (information drawn from the media or contemporary
culture that is widely available)

(e) Previous class discussion, lectures, and readings

(f) Procedural knowledge (information about the process of discussion)

(g) Other

2.3.2 Studies of high-quality text-based classroom discussion

There are many studies that have examined how different classroom discursive patterns in text-based discussion and different participation structures affect students’ on-task behavior and text comprehension (e.g., Applebee, Langer, Nystrand & Gamoran, 2003; Almasi, O’ Flahavan, & Arya, 2001; Alvermann & Haye, 1989; Branden, 2000; Wolf, Crosson & Resnick, 2005; McElhone, 2009; Nystrand, 2006; Reninger, 2007). First appearing in the 1980s, these studies foreground the social/cultural nature of classroom instruction. As Alvermann and Hayes (1989) stated, “it is oral language that weaves the fabric of classroom culture. [Thus], attempts to modify classroom discussion amount to nothing less than attempts to modify the very culture of the classrooms” (p.307). Studies of classroom discussions have addressed several issues. First, they have sought to define the features of academic discourse that occur in teacher-led or student-led discussions. These studies have also attempted to identify the role that teachers’ speech plays in generating student participation in classroom discussions (e.g. Almasi, O’ Flahavan, & Arya, 2001; Alvermann & Hayes, 1989; Kim, Crosson & Resnick, 2005; Worthy & Beck, 1995). The second issue these studies have addressed is whether the occurrence of academic discourse contributes to the quality of students’ reading performances (e.g. Applebee, Langer, Nystrand, Gamoran, 2003; Branden, 2000;
Authors of these studies have argued that academic discourse encourage students to join the discussions with teachers thus promoting the process of knowledge co-construction (Almasi, O’ Flavahan, & Arya, 2001; Worthy & Beck, 1995). They proposed that in academic discourse, the teacher can help students by scaffolding their use of effective discourse strategies, by demonstrating less authority in controlling the topics and the flow of the discussions, by decreasing the direct evaluation of students’ answers and by teaching the students how to “talk”.

For example, a case study conducted by Worthy and Beck (1995) documented how a teacher engaged her students in more “reader-based” discussion by transforming teacher-centered recitation to learner-centered dialogue in whole-class discussion. For Worthy and Beck, “reader-based” discussion was characterized as a discussion “being constructed between the text and the reader, with an emphasis on the role of the reader” (p.315). They contrasted “reader-based” discussion with “text-based” discussion, which was defined as one that “focuses primarily on extracting meaning from the text, with little or no consideration of the reader as part of the meaning-making equation” (p.315). The findings of their case-study indicated that the reader-based discussion can only happen when the teacher relinquishes some control over the topics of discussion and turn-taking rules. They suggested that teachers should ask fewer “closed questions” to evaluate students’ responses.

Almasi, O’ Flavahan and Arya (2001) also suggested that reduction of teachers’ control of topics and turn-taking rules is beneficial for productive discussion. This study examined the manner in which two peer-led discussion groups managed topics and the process of group discussion across time. In this study, the “coherence” of
conversation was addressed. Coherence refers to a relationship of binding between two utterances (Almasi, O’ Flavahan & Arya, 2001) and it occurs when “the participants are able to communicate successfully with one another” (Almasi, O’ Flavahan & Arya, 2001, p.99). The researchers emphasized the fact that “topic coherence” was crucial for successful discussion. Their findings indicated that proficient peer discussion groups were more skillful in (a) revisiting old topics, (b) making linkages between topics, and (c) in connecting topics with one another to sustain on-topic discussion. Almasi and her colleagues found that higher rates of peer discussion and the teacher’s demonstration of “metatalk” (discussion that focuses on how to promote discussion skills in the classroom setting) contributed to productive peer discussion. However, they suggested that teachers should be more aware that large amounts of teacher talk in the peer-led discussion, even when the teacher’s talk is to involve students in “metatalk,” might threaten students’ engagement with the topic.

A study conducted by Wolf, Crosson and Resnick (2005) examined the quality of classroom discourse and its relation to academic rigor. Wolf, Crosson and Resnick proposed that the academic rigor referred to discourse that promoted students’ academic engagement and achievement. They described academic discourse as discourse which “emphasized students’ opportunities for high-level thinking and active use of knowledge” (p.30). They assumed that the amount of “accountable talk” that was manifest in the classroom significantly increased the academic rigor and measured the occurrence of “accountable talk.” Accountable talk was characterized by three dimensions: (a) accountability to the learning community (ALC), (b)
accountability to accurate knowledge (AAK), and (c) accountability to rigorous thinking (ART). The criterion for ALC was the degree to which all participants understand the ideas and positions shared during the whole-group discussion; the criterion for AAK was the degree to which teachers and students ensured that participants provide specific and accurate knowledge as evidence to support their contributions; the criterion of ART was the degree to which speakers were asked to explain their thinking by using rational strategies and by drawing logical conclusions. Their findings suggested that there was a strong positive relationship between the academic rigor of the discourse and accountable talk. Teachers who promoted more accountable talk also performed better in (a) allowing more wait time for students to “link” their talk with the text and with each idea, (b) reformulating what students said, (c) avoiding overscaffolding the students’ responses, and (d) allowing students to elaborate their logic and confirm their statements with more evidence.

Nystrand (2006) conducted a review of empirical studies of the relationship between classroom discourse and reading comprehension in small-group and whole-class discussions. The studies he reviewed provided some evidence of high-level thinking and reading comprehension in various forms of discussion. His findings showed that whole-class discussions and small-group discussions significantly enhanced reading comprehension when the teacher demonstrated dialogically-organized instruction in the classroom. He stated that “dialogically organized instruction involves fewer teacher questions and more conversational turns than recitation, as teachers and students alike contribute their ideas to a discussion in which their understandings evolved during classroom interactions” (Nystrand, 2006,
However, his review also highlighted some contradictory results. For instance, in some empirical studies, it was found that the most productive discussions allowed the teacher to maintain considerable authority in controlling the text and the topics while students exercised their authority by elaborating ideas and constructing their own interpretations of the text. He also stated that this kind of teacher-led discussion, which was embedded in a problem-solving organization, had strong effects for below- and average-ability students.

Large-scale correlational study conducted by Apple, Langer, Nystrand and Gamoran (2003) revealed a relationship between classroom discussion and students’ academic performance in reading and writing. Their study involved 20 schools across five states. In this study, 1111 7th to 12th grade students from 64 classes were selected and stratified to reflect the variety of students’ academic performances. Analysis of classroom discourse revealed the use of three main discourse features in the classroom: “dialogic interaction”, “support of envisionment building”, and “extended curricular conversation”. Their findings revealed that students in classrooms with high academic demands and more emphasis on discussion-based approaches showed higher end-of-year literacy performance across track-levels. However, they also found that low-track students engaged in considerably less open discussion than did high-track students.

2.4 Research on Discussion as It Improves Reading Comprehension

In this section, I discuss the definition of reading comprehension and introduce the various approaches to teaching reading comprehension. Then I introduce concepts from a wide array of theoretical frameworks, including cognitive theory,
sociocognitive theory, sociocultural theory, reader response theory, dialogism and theory of situated learning. These theories provide a rationale for the use of discussion as a context for promoting reading comprehension.

2.4.1 Definition of reading comprehension

Studies on individuals’ reading comprehension were influenced by a large array of traditions or disciplines, including psychology, ethnofigurey, linguistics, literacy, sociology and educational practices (Alvermann, Fitzgerald & Simpson, 2005; Reninger, 2007; Tierney & Cunningham, 1984; Gaffney & Anderson, 2000). The most comprehensive definition of reading comprehension to date was put forth by The RAND Reading Study Group (RRSG), which suggested that reading comprehension involved an interaction between three elements: readers, texts and activities (Snow & Sweet, 2003). The RRSG defined reading comprehension as “a process of simultaneously extracting and constructing meaning through interaction and involvement with written language” (Snow & Sweet, 2003, p.11). In other words, the process of reading involved not only retrieving information from the text, but also building new meanings and integrating old and new information.

According to the RRSG, there are many factors that influence the reading process. Reader factors include cognitive, linguistic and nonlinguistic capacities; text factors include the text structure and vocabulary; and activities include the purpose for reading. The RRSG stated that the interaction between reader, text and activities was embedded in a large, sociocultural context, which comprised the cultural settings of schools, families and neighborhoods, the available instructional resources, and social interactions with peers and adults (Snow & Sweet, 2003).
Some studies that were rooted in sociocognitive theories, dialogism and sociocultural theories also considered a plurality of theoretical lenses in framing their own definitions of reading comprehension (e.g. Applebee, Langer, Nystrand & Adams, 2003; Cazden, 1988; McElhone, 2009; Nystrand, 2006; Palincsar, 2003; Wolf, Crosson, & Resnick, 2005). These theories considered reading comprehension as a product of social intelligence. They argued that readers were driven to think and read by their social purposes and that their understanding of texts was shaped by the social contexts in the classrooms (Applebee, Langer, Nystrand & Adams, 2003; Cazden, 1988; McElhone, 2009; Nystrand, 2006; Palincsar, 2003; Wolf, Crosson, & Resnick, 2005). For example, Cazden (1988) considered reading comprehension as an “active construction by each student of ‘context in mind’” (p.116). Nystrand (2006) proposed that reading comprehension was governed by classroom discourse and was dynamic and dialogic in nature. In a similar vein, Wolf, Crosson and Resnick (2005) defined reading comprehension as “a collaborative process where the students co-constructed meanings from the text” (see also Palincsar, 2003). These different definitions of reading comprehension all highlight the relationship between reading comprehension and classroom discussion. Taking into consideration the social context in which reading take place, classroom discussion is viewed as a “tool for comprehension” (Applebee, Langer, Nystrand & Gamoran, 2003, p. 688) that is instrumental in shaping the social constructions of knowledge.

McElhone (2009) conceptualized reading comprehension according to three orientations that reflect different epistemological stances toward reading and reading instruction: the outcome orientation, the procedure orientation and the sense-making
orientation. McElhone argued that people who hold the outcome perspective viewed reading comprehension as a quest to find a final answer to the meaning of a text and tended to overlook the value of multiple interpretations constructed by different readers. The procedure perspective emphasized facilitating the reading process by teaching strategies. Advocators of this approach made efforts to explicitly model the use of such strategies and procedures. Students were taught to use the strategies modeled in order to arrive at a standard understanding of the text. Advocators of process-oriented pedagogy, however, tended to ignore the emotional attachment and the context-bound text interpretation that emerged in the reading process. McElhone (2009) argued that reading should be considered from the perspective of sense-making, which framed reading comprehension as an active process to discover various interpretations of a text. Students who were supported by sense-making reading tasks were asked to read the text while considering an authentic and specific social context. The multiple interpretations generated by the reading process were respected and encouraged, enabling readers to create their own understandings of the text based on their social purposes.

In summary, the definitions of reading comprehension derived from studies in social constructivism, dialogism and sociocultural theory emphasized the social purposes of reading activities. They argued that readers were motivated to read and talk for the purpose of authentic communication. Studies focusing on the contextual factors in reading pedagogy assumed that classroom discourse did not exist only to teach reading strategies (Palincsar, 2003), but to help students use these strategies as tools to make sense of the texts in their social contexts (McElhone, 2009). They
argued that reading comprehension in the classroom was a continuous race that sought to support various interpretations of a text. To reach a deeper understanding of a text, reflective thinking was required. Students were supposed to be critical readers, who actively chose appropriate strategies to solve problems and generate their own text interpretations. Moreover, reading comprehension emerged from the social context and was the product of collaborative work by the members of a social group (Applebee, Langer, Nystrand Gamoran, Zeiser, & Long 2003; Cazden, 1988; McElhone, 2009; Nystrand, 2006; Palincsar, 2003; Wolf, Crosson, & Resnick, 2005).

2.4.2 Collaborative approaches to teaching reading comprehension

To better understand the social contexts in the classroom, many studies have explored the construction of classroom discourse and related it to the teaching of reading comprehension. Such scholars proposed that effective discursive strategies coupled with an open participation structure would facilitate deep text comprehension and promote the use of reading strategies. In this section, I review research on collaborative approaches to teaching reading comprehension.

Instructional approaches that engage students and teachers in different forms of collaborative social activities to teach reading comprehension are called “collaborative approaches” (Palincsar, 2003). According to Palincsar, these approaches all presuppose that reading comprehension should be taught in the context of social interaction. It should be noted that even though studies on collaborative approaches are numerous, only a few of them are advocated and adopted by school teachers and educational scholars. Some researchers identified several instructional approaches that have been predominant in the reading
pedagogies of the past 10 years (Block, Reed, Whiteley, & Cleveland, 2009; National Reading Panel, 2000; Nystrand, 2007; Palincsar, 2003; Reninger, 2007). The instructional approaches identified all placed emphasis on the use of learning strategies through various forms of collaborative activities. These instructional approaches included Reciprocal Teaching (Palincsar & Brown, 1984); Transactional Strategy Instruction (Pressley, et al., 1992); Questioning the Author (Beck, McKeown, Hamilton & Kucan, 1996); Concept-Oriented Reading Instruction (Guthrie, 2003; Guthrie, Wigfield & Prencevich, 2004) and Collaborative Reasoning (Chinn, Anderson, Waggoner & Nguyen, 1998; Chinn, Anderson & Waggoner, 2001).

Among these, Reciprocal Teaching, Transactional Strategy Instruction and Concept-Oriented Reading Instruction approaches can be considered “strategy-based” collaborative approaches. Their purpose in using discussion is to help students acquire and familiarize themselves with reading strategies by means of social interaction. In contrast, Questioning the Author and Collaborative Reasoning are considered “discussion-based” collaborative approaches, because they propose that discussion itself can serve as a tool to construct discourse about the text. These two methods consider discussion not only as a tool for teaching strategies, but also as a mean for co-constructing public interpretations about what is read in the classroom setting.

The “strategy-based” collaborative approaches were inspired by research on strategy instruction (Guthrie et al., 2004). Proponents of such approaches argue that reading comprehension is promoted by a set of cognitive and metacognitive
strategies (Guthrie et al., 2004). These strategies might include: (a) activating background knowledge (b) asking questions (c) generating questions (d) searching for information in the text (e) organizing information from the text, (f) understanding the structure of stories and themes of narratives and (g) monitoring comprehension during reading (Guthrie et al. 2004; National Reading Panel, 2000). Strategy training can increase students’ awareness of strategies and their functions in facilitating reading comprehension (Guthrie, 2004 et al.; Pressley, 1992). Students are given explicit cognitive strategic instruction by teachers or peers who model the strategies and practices used in authentic academic tasks. For example, Reciprocal Teaching was inspired by socio-cultural theory, in particular, by Vygotsky’s concepts of scaffolding and the zone of proximal development (ZPD) and cognitive theory (Palincsar & Brown, 1984; Palincsar, Brown, & Martin, 1987). This approach emphasized the importance of developing students’ metacognitive awareness during reading. In this approach, four reading strategies – summarizing, questioning, clarifying and predicting – are taught. These strategies are considered comprehension-fostering and comprehension-monitoring strategies. In the practice of Reciprocal Teaching, the teacher-student interactions and student-student interactions occur in small groups and take the shape of modeling, questioning and giving feedback to each other. The teacher is encouraged to gradually move away from teacher-led discussion towards student-led discussion as the students gradually became familiarized with the strategies. Palincsar and Brown (1984) argued that Reciprocal Teaching could help students perform the strategies that good readers used during reading.
Concept-Oriented Reading Instruction is used to enhance students’ reading engagement (Guthrie et al., 1998; Guthrie, 2004). In this approach, Guthrie and his colleagues proposed that strategy learning was strongly associated with the motivational attention, effort and desire to understand. They framed reading engagement as the “mutual support of motivations, strategies and conceptual knowledge during reading” (Guthrie et al., 1998). To increase reading engagement, this approach places strategy instruction in the context of authentic academic tasks. In their empirical studies (Guthrie et al., 1998; Guthrie, 2004), they helped the teachers identify a conceptual theme for their instructional design. Then, the teacher engaged students in activities of reading and writing in multiple genres, finding books in libraries, and using multiple strategies to search for information in expository and narrative texts that are related to the course’s conceptual theme. The students were encouraged to display their knowledge of a particular topic in small-group discussions or whole-class activities. The researchers believed that the rich real-world interactions and opportunities for presentations in Concept-Oriented Reading Instruction contributed to highly-motivated, self-regulated learning in the classroom setting.

Transactional Strategies Instruction (Pressley, et al., 1992; Schuder, 1993) also advocates the use of authentic academic tasks. This approach was motivated by cognitive theory and reader response theory, and proposed that students should be trained to coordinate a repertoire of strategies in authentic reading tasks rather than practice a set of isolated reading skills step by step. This approach also suggested that students should be aware of the purposes and values of the strategies, as well as
how and when to use them. Moreover, the approach argued that students should be encouraged to jointly construct their understandings of a text as they interact with it.

Transactional Strategy Instruction encourages open dialogue between teachers and students (Pressley, et al., 1992; Schuder, 1993). At the beginning of the class, the teacher explicitly introduces the purpose of using specific strategies. The teachers also encourage students to adopt particular strategies. Later, the students use these strategies to read the text. During reading, both teachers and students use modeling or think-aloud tasks to scaffold the use of the strategies. The students are encouraged to generate their own ways of interpreting the text and to flexibly adapt the different strategies for different reading proposes.

In a classification proposed by Murphy, Wilkinson, Soter, Hennessey and Alexander (2009), Questioning the Author and Collaborative Reasoning, were categorized in the scope of collaborative instruction within nine discussion approaches that effectively promoted high-level reading comprehension: Collaborative Reasoning (Chinn, Anderson, Waggoner & Nguyen, 1998; Chinn, Anderson, & Waggoner, 2001), Paideia Seminar (Billings & Fitzgerald, 2002), Philosophy for Children (Sharp, 1995), Instructional Conversations (Goldenberg, 1993), Junior Great Books Shared Inquiry (Great Books Foundation, 1987), Question the Author (Beck, McKeown, Hamilton & Kucan, 1996), Book Club (Raphael & McMahon, 1994), Grand Conversation (Eeds & Wells, 1989), and Literature Circles (Short & Pierce, 1990). These approaches were classified according to three different stances. The first was the critical-analytic stance, which included Collaborative Reasoning, Paideia Seminars, and Philosophy for Children. The critical-analytical
stance sought to “give prominence to interrogating or querying the text in search of underlying arguments, assumptions, world, views, or beliefs” (Murphy et al., 2009, p.741). Students were prompted to ask questions, formulate arguments or counterarguments, and take a position in interpreting the text. The second stance was the efferent stance. Discussion approaches in this stance encouraged text-based responses and included Junior Great Book, Instructional Conversations, and Questioning the Authors. This stance prioritized “knowledge acquisition…to read to acquire and retrieve particular information” (Murphy et al., 2009, p.741). The third stance was the expressive stance, which addressed reader-focused response through approaches such as Literature Circles, Grand Conversations, and Book Clubs and placed emphasis on the “reader’s affective response to the text or the reader’s own spontaneous, emotive connection to all aspects of the textual experience” (Murphy et al., 2009, p.741).

2.4.3 Theoretical frameworks underlying the use of discussion-based approaches for promoting reading comprehension

In the following paragraphs, I illustrate theoretical frameworks in reading comprehension and classroom discussion literature and relative empirical studies that based on those frameworks. These frameworks describe ways to promote reading comprehension via discussions, including schema theory, social cognitive theory, sociocultural theory, dialogism, the theory of situated learning and legitimate peripheral participation, and reader response theory.

The main contribution of schema theory was that it linked the concept of a text with authorial intention and the mental representations of readers. This theory
proposed that reading comprehension occurred when there was coherence among the
three elements of the concept of text, the author’s intention of writing and the mental
representations of the readers. Schema theorists defined schema as “the building
blocks of cognition” (Rumalhart, 1980, p. 33) and its functions were: (a) interpreting
the sensory data from the visual perception of the print language, (b) retrieving
information from memory, (c) organizing their action, (d) determining the goals of
reading, and (e) allocating attention to different resources (Rumalhart, 1980). In sum,
a schema was not only responsible for organizing the mental representations of
knowledge and experience but also for controlling the flow of perceiving knowledge.
Schema theorists were interested in discovering what qualified as a “well-defined”
schema in dealing with the complex process of comprehension and how instruction
could help the student construct or activate the appropriate schema to facilitate the
reading process. Many researchers suggested that it is the mismatch between the
readers’ schema and the text that caused the reading comprehension to break down
(Anderson & Pearson, 1984; Bransford, 1994; Kintsch & van Dijk, 1978). For
example, Rumalhart (1980) argued that a failure of reading comprehension might
occur because (a) the reader might not have the appropriate schemata to interpret the
text, (b) the reader might have the appropriate schemata, but the text clues were
insufficient for the readers to interpret the text, or (c) the readers might find a
consistent interpretation of the text, but the interpretation might not be the one which
is intended by the authors (see also Graesser, Singer, & Trabasso, 1994).

Studies rooted in schema theory suggested that idiosyncratic ways of selecting
and activating the specific schema would influence reading comprehension
Findings in some studies indicated that the reading process was actually the process of “cutting and fitting a schema in order to achieve a satisfactory account of a message” (Anderson, 1994, p. 469). As a result, the quality of schema (or schemata) which was activated by the reader influenced the outcome of the reading process (Anderson, 1994; Bransford, 1994; Rumalhart, 1980; Spiro et al., 1994; Spiro, 2001).

Schema theorists also proposed that the propositions formed inside a text could influence how readers made inferences from a text’s information (Kintsch & van Dijk, 1978). Thus, text analysis was necessary in reading instruction (Graesser, Singer, & Trabasso, 1994; Kintsch & Rawson, 2005; Kintsch & van Dijk, 1978). Empirical studies such those carried out by Kintsch and van Dijk (1978) and Kintsch and Rawson (2005). They found that the levels of text processing were related to the readers’ ability in making inferences to fill the gaps in the text’s message.

Graesser, Singer and Trabasso (1994) found that knowledge about the author, an understanding of who wrote the text, during what time and for what reason, was also essential for developing a deep understanding of the text. They argued that a reader should be able to “construct causes and motives that explain why events and action occur” and “infers the global message or points of the text” (p.373). However, this level of understanding could not be achieved if the readers lacked knowledge about the pragmatic context of the text.

With regards to instructional practice, cognitive theories suggested that the teacher should help students to develop new skills and acquire new knowledge to
modify their schema (Bransford, 1994). In particular, they proposed that (1) the teacher should be aware of how the readers’ goals and the structure of the text determined which kinds of schemata were activated in the reading process. It was believed that the activation of a good schema would significantly influence the ability to generate multiple levels of representations and the ability to make inferences (Kintsch & van Dijk, 1978). (2) Teachers should help students acquire reading skills and essential background knowledge in order to select and integrate meaningful schemata to understand the text of various genres (Anderson, 1994). (3) Because reading was an interactive process, the teacher should facilitate the dialogue between the readers, the text and the author.

Social cognitive theory is based on Piaget’s (1977) notion of constructivism, which emphasizes the impact of social influences in the intellectual development of the individual. However, Piagetian theory is different from Vygotskian theory in the following aspects: (1) Vygotskian theory considered intellectual development as fundamentally social while Piagetian theory argued that the individual is the starting point (Rogoff, 1990a); (2) Vygotskian theory viewed learning as occurring during social interactions whereas Piagetian theory stated that learning occurs in the individual’s mind (Cobb, 2005). In other words, social cognitivists did not view society and the individual as a unit.

Social cognitivists proposed that before accepting the influence of society, the child was equipped with inborn cognitive systems. However, an individual’s cognitive development required social support. According to De Lisi (1999), an individual’s cognitive operations and social influences coordinate with each other “as
two sides of the same coin” (p.18). For De Lisi, “development was believed to occur when each member engages his or her partner with his or her own reasoning” (p.22). As a result, discussion is seen as providing opportunities for children to “operate on each other’s reasoning in an ongoing dialogic dynamic” (p.22).

Piaget proposed that social influences foster change through the induction of cognitive conflict and logical operations while the individuals attempted to achieve equilibrium in their understanding (Rogoff, 1990b). Piaget argued, the operation could not be achieved in the absence of peer interaction (De Vries, 1997; Rogoff, 1990a, 1990b; De Lisi, 1999; Light & Littleton, 1994). Under the situation of asymmetrical adult-child relationship, Piaget contrasted adult-child interaction, and believed that intellectual development could only be fostered by cooperation and mutual respect in reciprocal interactions between members with equal status. He described this kind of reciprocal interaction as “a sort of spontaneous mutual engagement and mutual valuing that involves inter-individual feelings” (De Veries, 1997, p.6). Piaget believed that the socio-cognitive conflict only occurred in egalitarian relationships while ego-centric children were forced to practice “affective decentering” and role-taking tasks in order to maintain the dialogue with their peers (see also De Lisi, 1999).

In a review by Light and Littleton (1994), the free exchange of different points of view in peer discussion was illustrated. It also described how peer dialogues created conflict and social pressures. They argued that social pressures in peer discussion forced children to find solutions to the conflict. After the conflict was solved, the children were able to integrate the different perspectives and reached a
higher level of understanding of different perspectives.

Vygotskian theory and Neo-Vygotskian theory were most used sociocultural theories in classroom discussion research. Studies of classroom discussion tended to adopt the following concepts from Vygotskian theory and Neo-Vygotskian theory to explain the four functions of discourse: the development of higher mental functions, internalization, the zone of proximal development, and the mediation of semiotic tools.

Vygotsky believed that the cognitive development of an individual mind was not only influenced by the individual’s social life, but was in fact, rooted in social life (Cole, 1985; Mercer, 1994; Wertsh, 1991). He argued that the process of cognitive development was primarily rooted in social, interpersonal relationships, and then extended to the psychological, intrapersonal process (John-Steiner & Mahn, 1996). However, the higher mental functioning in the individual mind was not a simple copy of the social process. In fact, it was transformational and occurred in both individual and social activities (Wertsh, 1991). Vygotsky also believed that the higher mental functions are mediated by tools and signs (Wertsh, 1991; Vygotsky, 1978b, 1981). He argued that human beings did not act directly upon the physical world. Instead, human beings used symbolic (or psychological) tools to mediate and regulate their social relationships (John-Steiner & Mahn, 1996; Lantolf, 2000). As a result, in Vygotsky’s model, the higher mental functions were actually “the internalized social relationships” (Vygotsky, 1981, p.162). And the function of language was to mediate interpersonal relationships and intrapersonal mental processing. In Vygotsky’s (1978) work on “thought and language,” he described how
language could help mental development. He argued that individuals internalized external dialogue and transformed it into their internal language. He mentioned that cultural customs or social values could also be internalized and became the tools of thought. Vygotsky thus concluded that “the child’s intellectual growth was contingent on his mastering the social means of thought, that is, language” (Vygotsky, 1981, p.94). Thus, to support cognitive growth, it was essential to help children acquire the appropriate cultural norms and linguistic conventions as the tools for them to mediate their actions. Vygotsky believed that it is the use of these tools that broadened the range of human activities and allowed the higher-level mental functions to operate (Vygotsky, 1978b). The concept of internalization in Vygotsky’s work was based on several assumptions. First, the direction of internalization was from interpersonal works to the intrapersonal mind. Thus, the learning process was social in nature. Second, before mastering social skills, the individual needed the assistance of material artifacts and the support of more knowledgeable others to carry out human action (Lantolf, 2000). Vygotsky believed that the role of education was to help students internalize the cultural tools that facilitate the internal cognitive process. Follow-up studies of Vygotsky’s theory also continued such research interest to discover the functions of internalization and how it operated in social interactions between individuals. But the studies modified the Vygotsky’s notion of the learner. For example, Leont’ev argued that the learner still played an active role while internalization occurred. Leont’ev proposed that internalization actually helped the interaction between the learners and the social activity by forming a platform for communication. He also stated that “the process of internalization was not (only) the
transferal of an external activity to a preexisting internal plane of consciousness: it was the process in which this plane is formed” (Leont’ev, 1981, p.57). The concept of internalization also addressed the social nature of internal cognitive development. The individual not only used the signs and the tools for social purposes (e.g. to control and change the nature of the world) but also used these tools to raise human consciousness from the dynamics of social relationships. Thus, dichotomize the individual and the social processes when talking about cognitive growth can be incorrect. John-Steiner and Mahn (1996) argued that the way in which people acquired cultural tools is based on their social, religious, ethnic and economic backgrounds. They also argued that an individual’s mastery of certain tools was rooted in their interactions with their cultural and historical circumstances. The difference between social cultural theorists and social cognitivists, they propose, was in how they considered the boundary between interpersonal processes and intrapersonal processes. They argued that social cognitivists still maintained the dichotomy between the individual and social processes while social cultural theorists believed that the two are inseparable.

The contribution of Vygotsky’s theory was his emphasis that teaching and learning should consider cultural-related and contextual-bound circumstances, which had great influence on individual learning events (Cole, 1985). Building on the work of Vygotsky, Leont’ev replaced the term “internalization” by the term “appropriation” to name the process by which individuals learned to work with cultural tools to solve problems in the life environment. For Leont’ev, the process of learning to use cultural tools was not only the process of cognitive development, but also the result
of cognitive development (Palincsar, 1998).

Discussions about Vygotsky’s theory also criticize the power relationship between adults and children when teacher tries to scaffold students’ performances to reach their ZPD (Zone of Proximal Development). Many social cognitivists argued that the notion of ZPD might overlook the active role that the child played in social interaction, since Vygotsky believed that until the child reached the advanced stage in the mastery of the tools of thinking, an asymmetrical relationship in adult-child interaction is necessary (Wretsch and Stone, 1985). In response to these critics, advocates of social cultural theory have expanded the concept of ZPD to redefine the power relationship. For example, Brown argued that the learning in ZPD was equally distributed and a socially interactive activity (John-Steiner and Mahn, 1996). He stated that students in learning communities equipped with various degrees of expertise could take turns to contribute to each other’s learning tasks. Brown’s inclusion of artifacts and his account of the involvement of other competent peers expanded the range of facilitators in a scaffolding activity. His idea of a learning community was echoed by Cole’s statement about shared learning responsibility (Cole, 1985), which proposed that participants in learning communities exercised different levels of responsibility by virtue of different levels of expertise. Thus, for Neo-Vygotskian researchers, the notion of ZPD meant a collaborative relationship between the learners and the facilitators (Lantolf, 2000, Mercer, 1994).

The empirical studies that applied Vygotskian and Neo-Vygotskian theory in classroom discussion explored the effects of various forms of teacher-children dialogue and peer group dialogues in scaffolding students’ thinking and reasoning
tasks. For example, studies by Mercer and his colleagues (Mercer, 1996, 2000, 2004, 2008; Mercer, Wegerif & Dawes, 1999) introduced the concept of “Exploratory Talk” to explain the role of discussion. In their empirical studies, Mercer and his colleagues proposed that: (1) unlike social cognitivists, who emphasized individual learning, Neo-Vygotskians highlighted the value of collaborative learning; (2) dialogue should be considered the medium of classroom education and a social mode of thinking. They believed that the teacher should take responsibility to help the students acquire the culturally appropriate patterns of dialogue while exercising their tasks of collaborative discussion. Mercer and his colleagues also believed that through engagement in collaborative work, students could gain benefits from the cultural and experience which is created in the social activities. For Mercer and his colleagues, explanatory talk provided a platform for students to exercise their thinking and reasoning socially. They also stressed that Explanatory Talk was culturally appropriate since it is “a kind of language use which played an important function in the cultural activities of many societies” (Mercer, Wegerif & Dawes, 1999, p. 98). They believed that the Explanatory Talk represented an educated way of using language to construct knowledge which one would expect to be fostered by school experience (Mercer, Wegerif & Dawes, 1999).

The concept of dialogism was rooted in Bakhtin’s work (Bakhtin, 1986). Bakhtin argued that people’s utterances cannot be interpreted without taking into consideration their location in the flow of dialogue and the continuous interaction between the two or more voices in the specific situation. Theorists of dialogism also stated that the use of language varies depending on the way in which speakers
constructed relations with their responders (Bakhtin, 1986). In the study of language and thought, Bakhtin’s theory inspired researchers to consider with whom an individual was speaking, with what purpose, what voice was being used and how the speaker’s voice was interweaved with other voices to make meaning.

Dialogic theory addressed several propositions: (1) “discourse was continuously woven into a chain of speech communication by one speaker’s responsive position relative to another” (Nystrand, 1997, p.8); (2) the emergence of self consciousness was fundamentally dialogic (Holoquist, 1981); (3) “voice was not a tool but an answer to the question ‘who is speaking’” (Wegerif, 2009).

Regarding the first proposition, Bakhtin (1986) argued that speech can only be understood by taking into consideration the question of addressivity. The term addressivity implied the following: (1) to understand speech, we must consider who is speaking and who is responding, (2) one could not correctly understand the meaning of an utterance without recognizing the uniqueness of the cultural and historical contexts in which the conversation occurs. For Bakhtin, the meaning of the utterance was completed by the speaker and the addressees. He stated that “the speaker ends his utterance in order to relinquish the floor to the other or to make room for the other’s active responsive understanding.” (Bakhtin, 1986, p.71). Thus, the meaning of the utterance was embedded in “the past utterance that it is responding to and the future utterance that it anticipates” (Wegerif, 2009). In other words, dialogic theorists argued that in order to correctly understand the function or the meaning of an utterance, one must not only consider the intention of the speaker, but also how the utterance was responded to in the social context.
Second, dialogic theory introduced new interpretations of the self and identity. Holoquist (1981) argued that self consciousness could never be considered a self-sufficient construct because it emerged from an awareness of “otherness.” In other words, our understanding of ourselves and our identities were actually our own reflections of how we relate with others.

Third, Bakhtin defined voice as a “speaking consciousness” (Wretsch, 1991, p.51), or as “the person acting—that is, speaking or writing in a particular time and place to know and unknown others” (Cazden, 1988, p.198). The term “voice” suggested that language was endowed with subjectivity and that the nature of dialogue was fundamentally intersubjective. The speaker who generated the voice posed his/her self consciousness in the chain of dialogue and his or her voice was reflected and completed by other’s voice, which was also an expression of the other’s self consciousness. Wretsch argued that voices were enriched by means of dialogue (c.f. Holoquist, 1981). He also proposed that it is the heterogeneity of voices that motivated the interamination of the dialogue.

Another concept from dialogism that has inspired research on classroom discussion was that of speech genres, the language conventions that were used in different social contexts and communities. According to Cazden (1988), Bakhtin acknowledged that speakers in different social contexts and social communities had their own communicative conventions and protocols. The particular genre and social situation thus influenced the process of meaning making in the dialogue.

In research about classroom discussion, discussions of Bakhtin’s theory were often coupled with neo-Vygotskian social cultural traditions. However, according to
Wretsch (1991) and Wegerif (2009), Bakhtin’s notion of dialogicity had its own characteristics. In contrast to Vygotsky, who proposed that the individual’s mental development is part of the dialectic process of society, Bakhtin believed that the epistemology of dialectic tradition would result in monologism, which assumed that one voice would be legitimized above others or considered superior to other voices. For Bakhtin, mental development could only occur in a context in which the plurality of voices was respected. He also proposed that the interweaving of different voices in dialogue could lead to the phenomenon of “ventriloquation,” which referred to people adopting or appropriating others’ utterances in their own voices (Wretsch, 1991). This phenomenon, he believed, would occur as long as speakers used social language to assist them in constructing and elaborating their own discourses.

The advocates of dialogic theory considered that interamination between voices facilitated the generation of meaning and the functions of intermental as well as intramental processing. They proposed that that the participation structures and the authority relationships that were privileged in classroom discussion would structure the way in which the utterance were evaluated and responded to (Applebee Langer, Nystrand & Gamoran, 2003; Nystrand, 1997, 2007; Billings & Fitzgerald, 2002; Chinn, Anderson, & Waggoner, 2001). They also suggested that students would adopt specific genres in different social contexts, depending on what is appropriate for the particular situation (MacMahon, 1992).

For example, Nystrand (Applebee Langer, Nystrand & Gamoran, 2003; Nystrand, 1997, 2007) stated in his studies that good instruction should open the floor to different voices. His studies involved conducting discourse analysis of
classroom discussion to illuminate the phenomenon of multivoiceness. His findings showed that the way questions are asked, evaluated and responded to have an effect on the adaptation of different voices in the dialogue. His studies further illustrated how the open-minded participation structure and the use of authentic questions promoted higher-level comprehension and deeper interpretations of the text.

The theory of Situated Learning and Legitimate Peripheral Participation (LPP) used the metaphor of “learning as participation” to conceptualize the learning process (Sfard, 1997). Situated learning and LPP gained insight from Vygotskian theory and theories of language socialization. Theorists in Situated Learning and LPP valued the role of action in the process of knowledge construction. They proposed that “knowing” equals “action” (Sfard, 1997). They also proposed that the concept of “doing” implied the features of “situatedness, cultural-historical embeddedness and social mediation” of the learning process (Sfard, 1997, p.6).

In defining LPP, Lave and Wegner stated that participation is “an evolving and continuously renewed set of (social) relations” (Lave & Wegner, 1991, p.50). They argued that their notion of LLP is different from Vygotsky’s notion of ZPD because LLP emphasized the changing relations between newcomers and old-timers in the context of practice. They were also interested in the learning trajectories of newcomers as they were socialized and became members of the community. They criticized ZPD for its assumption that internalization was a universal process, which ignored the individual differences in internalizing social norms. They argued that learning was influenced by the social and historical backgrounds of the individuals and that the process of learning was actually the process of developing one’s identity
as a member of a community (Lave & Wegner, 1991; Lave, 1991).

Theorists of Situated Learning related the acquisition of the identity with the acquisition of knowledgeability and practical skills (Brown, Collins, Duguid, 1989; Lave, 1991; Lave & Wegner, 1991; Roggoff, 1996). They argued that learning is a continuous negotiation between the meaning of knowledge, ways of knowing and the perspective of world knowledge in social practice. Through social practice, the learners, as the newcomers to the community, shared the responsibility with the oldtimers and being socialized in the knowledgeable skills and cultural norms which facilitated their participation. Theorists of Situated Learning were also interested in the concepts of mastery and apprenticeship, which were related to situated social practice. They argued that learning was not necessarily provoked by structural instructional activity. In fact, for them, it was the opportunity of participation that made the learning happens.

However, proponents of situated learning and LLP were not clear on the kind of “participation” that was legitimated as the way of learning (Haneda, 2006). In other words, they did not illuminate how different learning trajectories would result in different learning achievements. Haneda believed that differences between individuals and participation structures resulted in different paths of participation. The unequal status of social members in the community could present an obstacle to the full participation. As a result, to fill the gaps, some studies such as those conducted by Haneda (2006, 2008) and Talmy (2008) used empirical studies to illustrate how participation opportunities and the power structure in the classroom context influences the forming of identity and how the learning trajectories might be
The concept of Situated Learning and LLP have never been directly cited by researchers studying classroom discussion and reading comprehension, since proponents of situated learning did not address the role of language in students’ cognitive development. However, the metaphor or learning as participation has been widely adopted by researchers and practitioners in literacy research in raising issues of identity and understanding its role in classroom instruction.

Reader Response theories emphasized the transactional relation between the text and the reader and the possibilities for multiple interpretations of a single text (Rosenblatt, 1938, 1969, 1978). Theories in Reader Response Theory endeavored to (a) decompose the authoritarian status of the text, (b) indicate that the reader plays an active role in text interpretation by bringing in his or her past experience and present personality, (c) show that the reading process represents a continuum between a nonaesthetic attitude and an aesthetic attitude, (d) demonstrate that literary interpretation in the aesthetic stance was actually a “creative activity” that is continuously shaped by the reader’s personal experience and emotional response.

Reader Response Theory inspired researchers to use literary discussion as a tool to provoke aesthetic reading (Eeds & Peterson, 1991; Hart, Escober & Jacobson, 2001; McGee, 1992; McMahon, Pardo & Raphael, 1991; Pardo, 1992). As Eeds and Peterson stated, aesthetic reading made the reader become a good critic of the text, one who was able and willing to bring literacy insight and aesthetic judgment to the text.

Reader response theory addressed the active role of readers. This theory also
valued the subjectivity which the reader brought into the reading process. However, reader response seldom talked about the role of discussion in provoking the aesthetic reading. As a result, some of the studies also adopted the concepts from Vygotsky to explain the role of social interaction (McCutchen, Laird, & Graves, 1993; Raphael, Brock, & Wallace, 1997).

### 2.5 Research on Collaborative Reasoning

Collaborative reasoning (CR) is a discussion format that is premised on Vygotsky (1978)’s notion of internalization and notion of schema (Anderson, et al., 1998; Anderson, et al., 2001). In CR, students gather in small groups to discuss a central question about a story they have read (Clark et. al, 2003). In the discussion, students expand their understandings of the topic to form more sophisticated arguments, “containing multiple reasons, qualifiers, counterarguments, and rebuttals” (Reznitskaya & Anderson, 2002, p.321). In addition, CR is intended to promote the growth of students’ reasoning ability and argumentation skills (Clark, et al., 2003). In CR, a central question is used to elicit alternative perspectives from students for which evidence can be found in the text. During discussion, students are expected to use the story and their prior knowledge to support the positions they favor. CR has several characteristics: (1) the main issue being discussed lends itself to multiple perspectives or positions; (2) both the text and students’ experience are used as bases for consideration of the issues; (3) the emphasis is on understanding students’ positions and how they came to them rather than reaching consensus on an issue or a single interpretation of the text (Waggoner, et al., 1995, p.583).

In CR discussion, the teacher serves as facilitator who promotes students’
independent thinking and self-management of turn taking through strategies of modeling, prompting, clarifying, summarizing, and encouraging (Anderson et al., 1998). The major goal of CR is to foster student’s independence so they are able to carry on a discussion with little or no assistance from the teacher. The teacher only intervenes when he or she feels the need to challenge students’ reasons, to ask for clarification, or to request evidence to support an idea. The teacher may also decide to intervene if a discussion goes too far astray from the topic or if a student becomes confused about someone’s line of reasoning. Moreover, the teacher may teach students how to facilitate the discussion by modeling the skills such as repeating the central question, summarizing the points the students have made so far, or asking a student to clarify a position (Clark, et al., 2003; Nguyen-Jahiel et al., 2007).

For example, if students failed to uncover an alternative point of view, a teacher might interject by stating “But, what do you think about…” as a way of introducing a counterargument to stimulate further discussion (Reznitskaya, Anderson, & Kuo, 2007). The teacher’s demonstration of phrases such as “gives reason“, “provides evidence“, “forms an argument“, and “makes an assumption“ in discussions are only supposed to happen when students are novices in the CR context. Once students come to understand the meanings of these phrases and use these phrases to challenge each other’s reasons, the teacher reduces his or her involvements in discussions and allows students to take over. In CR, open participation is encouraged, students are not required to raise their hands or wait to be called on when speaking. By adopting open participation, students gradually learn to initiate a serious discussion. They learn to help each other stay on topic and to avoid interrupting each other (Anderson,
et al., 2001; Clark, 2003).

CR was chosen as the discussion approach for the participants in the study for several reasons. First, CR is appropriate for students who have limited reading ability in Chinese language but greater knowledge of the issues described in the stories. Short texts written in simple language are suitable for discussion provided the topics are interesting and engaging. Second, students do not need to spend too much time becoming familiar with CR discussion because the procedures are relatively easy to follow. This is also a benefit for the second language teacher who has limited time to teach his or her students how to engage in discussions. Third, unlike other discussion approaches such as Book Club (McMahon, 1992), CR does not require the teacher to follow specific steps to teach the story before the students engage in discussion. Therefore, the teacher can use CR in combination with his her usual instructional strategies in the reading sessions.

Experimental studies of CR have supported the aims of promoting students’ reasoning ability and understanding of texts (Anderson et al., 2001; Anderson, Kim, & Li, 2008; Clark, et al., 2003; Chinn, Anderson, & Waggoner, 2001; Reznitskaya, et al., 2001). In general, the evidences suggest that CR stimulates critical reading and improves students’ engagement with the text. CR also provides opportunities for students to become skilled in argumentative discourse through thoughtful and lively dialogue. Studies indicate that CR is effective in promoting students’ ability to make reasoned arguments in their oral discussion (Clark, et al., 2003) as well as in their written essays (Reznitskaya, et al. 2003). CR also produces greater student engagement and more extensive use of several higher cognitive processes, including
elaborating text propositions, making predictions, using evidence, and expressing and considering alternative perspectives (Chinn, Anderson & Waggoner, 2001; Kim, 2002).
Chapter 3

Methodology

A case study design was implemented to provide in-depth description and analysis of a group of Chinese heritage students who were engaged in the discussion of text within the context of a Chinese community school. I considered a case study was suitable for my inquiry because it enables a rich, thick description of interaction in the classroom.

The purpose of a case study is to investigate the specific features of a “bounded system” (Stake, 2005). According to Yin (2008), a case study is “an empirical inquiry that investigates a contemporary phenomenon within its real-life context, especially when the boundaries between phenomenon and context are not clearly evident” (p.18). Stake (2005) claimed that a case study is suitable for “recogniz (ing) that certain features are within the boundaries of the case, and other features outside” (p.445). In this study, I considered the Chinese language class as the “bounded system” in which the features of teaching and learning activities could be studied. By adopting a case study design, I hoped to discern the patterns and sequences of the interactions between teachers and students in their existing social and cultural context.

A case study is also an appropriate research design to address a practical problem which arises from everyday life (Merriam, 2009). According to Stake (1995, 2005), a case study can be carried out for “instrumental interest, that is, to provide
insight into an issue or to redraw a generalization” (Stake, 2005, p.437). Stake also argued that a case study can “play a supportive role… (which) facilitates our understanding of something else” (Stake, 2005, p.437). In this study, my instrumental interest was to enhance the quality of classroom discourse for the teaching of Chinese literacy.

This study was also driven by the special social and cultural circumstances of the target Chinese class. This class comprised an experienced teacher, Ms. Hen, and five heritage students who were learning Chinese written language. Ms. Hen was open to different instructional approaches and had a strong commitment to improving the quality of instruction. Her students were mainly lower-achieving readers in Chinese because of their weak connections to the Chinese ethnic community. Ms. Hen was receptive to any kind of innovative teaching practice that might increase her students’ motivation to learn Chinese and support her efforts in helping them learn to read Chinese.

In my study, I incorporated the use of a single-subject experimental design into my case study to strengthen my research. My decision to incorporate a single-subject experimental design was inspired by Neuman and McCormick (1995) who suggested that the combination of single-subject experimental design and case-study research is useful for gaining a holistic understanding of phenomena. The combination of the two research designs helped me to identify any changes in discursive patterns in the classroom discussions and in students’ reading performance as a result of introduction of CR.

The most distinctive feature of single-subject experimental design is
establishing a baseline of target behaviors before a new intervention is introduced to the participants (Neuman & McCormick, 1995). Therefore, I established a baseline of the discursive patterns of classroom discussions and the students’ reading processes and strategies before I introduced CR to the class. The baseline period lasted for five weeks. After that, an eight-week intervention of CR sessions was conducted. During the intervention, I recorded any changes in discursive patterns between Ms. Hen and her students and in students’ reading processes and strategies.

3.1 Description of Research Site and Participants

Before I started my study, I visited the target Chinese heritage classroom from January, 2010 to May, 2010. During my visits I observed the teacher, her teaching materials, and the social interactions between the teacher and her students. In September, 2010, I started my study, which initiated a program of story discussions from September 2010 to April 2011. Followings are descriptions of the school, the teacher, the students, and the instructional practices prior to the study.

3.1.1 The school

The case study took place in a Chinese community school that was affiliated with a state university in a Midwestern state in the U.S. The school had a student population composed of 95% Chinese heritage students and 5% children of non-Chinese background. Most of the parents of the children in this school were faculty or graduate students of the affiliated university.

The Chinese community school was funded by a Taiwanese linguistic professor who was teaching in the affiliated university in 1970s. The classes were first held on Saturday afternoons. After a while, it was changed to Sunday afternoons at the
request of parents. Until 2010, there were about 170 students studying in the school. The school was mainly funded and supported by the parents; they paid the tuition fees and volunteered to be the administrative staff in the school. Sometimes, some of them even served as teachers at the school. Most of the parents were graduate students, faculty of the state university, or family members of the students or the faculty of the state university. Most of the teachers in the Chinese community school had experience teaching Chinese as a first language in their home countries. Some of them had teaching certificates in Chinese language teaching or other disciplines. However, few of them had experience teaching bilingual children.

As for the language classes, this Chinese community school ran two curriculum tracks for the students who used different Chinese writing languages. Classes in which the simplified Chinese characters and Hanyu Pinyin (the phonetic systems that was adopted by speakers in P. R. China) were taught co-existed with the classes in which the traditional Chinese characters and Zhuyin Fuhao (the phonetic systems that was adopted by speakers in Taiwan) were taught. The criteria for categorizing students to different grades were mostly based on the students’ expectations, their ages, and sometimes their language proficiencies. Prospective students were allowed to audit language classes offered in each grade and to choose the one they liked.

The school also provided curriculum tracks for the students who were or were not fluent speakers of Chinese. The curriculum provided for non-Chinese speakers allowed the teachers to use English as a supplementary language in their classrooms. In contrast, the curriculum for fluent speakers required the teacher and the students to use only Chinese when they communicated with each other. However, the decision
to place a student in a particular curriculum track was based on the preference of the 
student, not his or her language proficiency. If the students considered themselves 
non-native speakers of Chinese and they were reluctant to be in a Chinese-only class, 
they were advised to choose the curriculum track for the non-fluent speakers.

In addition to language classes, the school offered a variety of choices for 
extracurricular activities such as programs in Chinese singing, calligraphy, Chinese 
martial arts, Chinese yo-yo ball, drawing, art, chess, and Chinese dancing. Most of 
the students would spend four hours in their Chinese class: the first two hours were 
for their Chinese language class, and the last two hours were for their extracurricular 
activities. However, some students, like the participants in my study, chose not to 
join the extracurricular activities after their language class. The students who 
did not 
join the extracurricular activities were free to leave after their language class was 
dismissed.

Every Sunday afternoon, the classes started sharply at 1:30 pm at one of the 
buildings of the university. Staff and language classes teachers usually arrived at 
1:10 pm to prepare for teaching. Around 1:20 to 1:30 pm, the parents would bring 
their children to the classrooms. After they sent their children to the classrooms, the 
parents usually waited in the lobby, chatted with each other, and helped the staff or 
the teachers to look after the young children who were waiting around. The language 
classes were usually dismissed at 3:30 pm. After the language class, the students ran 
out of the classrooms for their extracurricular activities, which might be held on the 
field outside the building or in another classroom. The parents who waited for their 
children in the lobby would help the children find their next classroom or help the
teachers clean their classrooms. Most of the language teachers would dismiss their classes on time because their classroom would be used by the teachers who taught the extra-curricular activities.

After the extracurricular activities were dismissed at 5:30 pm, most of the children went home with their parents. The staff of the school would clean the lobby and deal with administrative issues until 6:30 pm.

In the beginning of the semester, there was usually a meeting for teachers and the staff to discuss the teaching plan for next semester or activities celebrating special days such as Spring Festival or the Mid-Autumn Festival or even the Sports day. The classes would be suspended on those special days. All of the teachers, parents and the students were encouraged to join the activities on these days.

The parents considered that attending the Chinese community school gave them the opportunities to maintain their relationships with other Chinese families. It was also a way to find language resources for their children. They expected that their children would achieve a language proficiency equivalent to that of a native or near-native Chinese speaker. Some of the parents even expected their children to acquire manners by their Chinese teachers. The teachers in the school had to report students’ performance to the parents every week. The teachers also had to keep contact with the parents via e-mail, phone or communication sheets.

If the teachers wished, they could teach the same group of students for many years, even until the students graduated. As a result, there were some teachers who had taught the same class for five or six years. Some teachers said that their students were just like their own children since they had been with them for such a long time.
3.1.2 The teacher

The class that I worked with comprised Ms. Hen (pseudonym) and her five teenage students. Ms. Hen was bilingual and had experience teaching English as a Foreign Language (EFL) classes for 12 years in Taiwan, and Chinese as a Second Language (CSL) classes for two years in the Chinese community school. She earned her master’s degree in curriculum and instruction in the United of Kingdom and was now pursuing her Ph.D. in education in the state university. Ms. Hen had taught the class for two years. After this class, Ms. Hen also served as a teaching assistant in another class that taught how to make artifacts. Ms. Hen was planning to stay in the United States with her husband after she graduated. Therefore, she considered teaching in the Chinese community school was a good way to maintain social relationships with the local Chinese families. Another reason that motivated Ms. Hen to teach in the Chinese school was her love for the children. She told me:

“When I applied for this job, I thought it was unpaid and they just needed volunteers to take care of these children. But it’s okay for me if I am not paid. I love children and I have a lot of experience in nursing and tutoring children at various ages. When I studied in the United Kingdom, I even volunteered to babysit the orphans who lived in the church. I just want to be with children and talk to them. They make me happy.” (Teacher-interview, November 1, 2010).

Ms. Hen was very keen to make friends with her students. She discussed foods, school lives, electronic games, and other topics relevant to a teenager’s life with her students. She also tried to make her students feel comfortable in her class by hosting games or picnics during the class. Ms. Hen found that students took her Chinese class because their parents wanted them to. As a result, she tried to increase their motivation to attend the class. She said that she knew that it was a burden for these
children to attend Chinese school on Sunday afternoons, so she wanted her students to enjoy her class and be interested in learning Chinese (Teacher-interview, November 1, 2010). Ms. Hen also expected her students to study hard and earn good grades both in the Chinese school and in the public schools. To make the students study hard, she tried to encourage students to think about how the knowledge they acquired from their educational experiences, whether in the Chinese school or in the public schools, could help them make better choices in their future. She stated “I used to spend one hour during class to discuss with them: “What do you want? What are you going to do in the future? Are you going to college?” When it comes to this question, some of them just felt hopeless and said: “I cannot do anything. I don’t know anything about college, I think I will go if I am lucky” I do not like the way they say that, you know? I mean, now you live on campus and you kind of interact with many doctoral students and these professors all the time, if you have a goal you need to make it. You have got many people to help you. You can consult your parents, your teachers, or even me.” (Teacher-interview, November 1, 2010).

Before the students came to this class, they were taught by other Chinese teachers who overwhelmed them with drills in memorizing key words, phrases and sentences and with quizzes. Therefore, when she started to take care of the students, she found that they considered Chinese not only a boring class, but also an additional “burden” to their study. Because of their low motivation, some of them refused to go to the Chinese school or do the homework or drills in the class and they seldom spoke Chinese to their family members.

However, Ms. Hen considered Chinese a useful “tool” for them to communicate
with their family members and make friends with Chinese speakers. As a result, Ms. Hen considered that raising their motivation to speak and to read Chinese was her first priority in her teaching of Chinese language. She told me that her way to make the Chinese class useful to the students was to add conversation practice in her classes. The conversation practice she adopted was based on students’ life experience. She said:

“Before I took care of this class, these students had learned Chinese for three years. However, they could not either use pinyin to help them read or have short conversation with native speakers. As a result, I did feel a need to help them from the very beginning of learning a language. I designed short dialogues based on their life experience and asked students to practice these dialogues in the class. And I required student’s active participation when we were doing conversational practice”.

(Teacher-interview, November 1, 2010).

Ms. Hen considered my study to be beneficial to increase her students’ motivation to learn, because it would enable her to work with me in writing 13 stories based on topics that would better match her students’ interests. She told me that the current materials that the Chinese community school adopted for teaching the heritage students—a series of textbooks designed by Ma Liping (2008)—did not fit the social needs of her students. The stories, rhythms and riddles introduced in the Ma textbooks were mainly based on the life experiences of 6 to 7-year-old children who were born and lived in P. R. China, not for a young adult in the United States. As a result, her students had frequently complained about the textbooks and they refused to use them in the coming semester. She thought my study might inspire her to find or create new learning resources for her students. She also expected my study would introduce her new strategies that might help promote students’ participation in
3.1.3 The students

Five 13 to 15 year-old heritage students were involved in this study. The students were classified as Heritage Language Learners 2 (HLL2). According to the definition by Carreira (2004), HLL2 students are those who are connected with the Heritage Language community only through their family or ethnic background and are not active members of the Chinese community. All five students were native or near-native speakers of English with limited communicative competence in Chinese.

The five students in the study were Victoria, Larry, Emily, Olivia, and Michael (all pseudonyms). Larry and Emily, and Olivia and Michael, were two pairs of siblings. Larry and Emily had been in this school for one year. They were the children of a Chinese-immigrant family who ran a Chinese restaurant. Larry and Emily’s parents spoke Mandarin well but seldom spoke Mandarin to their children. The language that Larry and Emily had acquired in their home setting was Fuzhou hua, one of the dialects of the Chinese language. Olivia and Michael were the children of two professors in the state university. Their mother was a second-generation immigrant from P. R. China and their father was an Italian. Olivia and Michael had the experience of living in P. R. China with their Chinese relatives. And they regularly visited their relatives in P. R. China with their parents once a year. Olivia and Michael told me that, even though their mother could speak Mandarin, they seldom used Mandarin at home because their father was not a Mandarin speaker. However, both of their parents encouraged them to learn Chinese. Olivia and Michael had studied in the Chinese school for two years.
Victoria was a daughter of a merchant who owned a Chinese supermarket. She was new to the school and joined the class in the third week of the semester. Victoria was born in a Chinese-Vietnamese family. She could not speak or read Chinese very well. However, Victoria learned the pinyin system before she went to the school and she had many good friends in the Chinese community. Victoria was new to the class. She had never been to any formal Chinese class before and this semester was her first semester in the Chinese community school. Because of Victoria’s lack of experience in learning to read and write Chinese, Ms. Hen told me that she should not participate in the oral tasks after the class (see below).

3.1.4 Instructional practices prior to the study

Before my study began, I visited Ms. Hen’s class several times from January 2010 to May 2011 to gather information about the instructional practices in Ms. Hen’s class. I had talked with Ms. Hen about her pedagogical philosophy several times. The result of my observation indicated that Ms. Hen’s classroom was a little different from other classrooms in the Chinese community schools; I found that the students in Ms. Hen’s class were not as “disciplined” as students in other classes. Ms. Hen’s students were allowed to grab food or drink at anytime. And they were allowed to leave their seats at any time if they wanted to go to the bathroom. If a student misbehaved, Ms. Hen would not yell at him or her but simply signal to the student by hand gesture or short warning. Furthermore, students were allowed to speak English in the classroom if they wished; Ms. Hen thought that the Chinese-only policy in the school might prohibit students from freely expressing their opinions because they were not good at listening and speaking Chinese. As a
result, she had a different policy in her class. In our interview, Ms. Hen told me “I hate to tell the students ‘you must speak Chinese in my class.’ I mean, I would like to let them try their best. I encourage them to try. They’re encouraged to use Chinese to express their opinion. But if their Chinese ability does not allow them to express their thought, English is also welcome.” (Teacher-interview, November 1, 2010).

Although the students were not as disciplined as the other students in the Chinese community school, most of the students still finished their homework on time and followed the instructions of Ms. Hen. Ms. Hen required the students’ participation in her instructional activities, especially in the oral practice. With great patience, Ms. Hen expended a lot of effort on eliciting students’ oral responses to her questions. For instance, Olivia performed well in reading and writing. However, she was too shy to speak Chinese in front of other students and she refused to answer Ms. Hen’s questions. To encourage Olivia to talk more, Ms. Hen praised her a lot and spent time waiting for her responses. Ms. Hen would say “OK! I’ll come back to you later” and give her more time to prepare. She was also mindful of the students’ reading and writing habits. For instance, she would remind Larry and Emily to take notes in their textbooks if they did not do so. When the students had difficulties completing their homework, Ms. Hen would ask them to come to school earlier to help them with their homework.

In my observations from January 2010 to May 2011, Ms. Hen adopted Ma Liping’s textbook as her teaching material. What Ms. Hen usually did in her teaching of Ma Liping’s textbook was to read the text aloud in Chinese and paraphrases it in English for the students. When she read aloud, she would occasionally stop and write
the key words with its translation and pinyin on the board. Then she modeled how to pronounce the word and gave mini-lessons about radicals or pinyin.

The typical classroom activity that Ms. Hen arranged for her students was in the form of drills. These included drills in sentence making, key-word fan-tan, or short conversations in her class activities. She would ask the students to read sentences and key words one by one to check their pronunciation and she asked them to make sentences for the key words taught the previous week. Students were also encouraged to recall what they knew about the rules of pinyin or Chinese phrases in their learning of new materials. Ms. Hen then asked students to make sentences or phrases with these words. After the drills, Ms. Hen would have the students read after her or answer closed questions to evaluate if they were paying attention to her teaching. After the class, Ms. Hen told the students to complete worksheets which required the students to practice writing the new words, radicals and sentence patterns. In the teaching of the Ma Liping’s textbook and in the mini drills, the oral exchanges between Ms. Hen and her students were usually recitation-based.

My observations also indicated that Ms. Hen had high expectations for her students’ pronunciation; she wanted her students to speak, especially to Chinese native speakers, “understandable” Chinese. Ms. Hen spent lots of time correcting students’ pronunciations and tones. When students were speaking, Ms. Hen listened carefully to their pronunciation and she gave immediate feedback on their performance.

Before my study started, the teaching material Ms. Hen used was Ma Liping’s textbook (Ma, 2008). This textbook was aimed at helping Chinese learners to
increase their vocabulary and reading speed in a short time by having them read a lot of materials including poems, songs, short stories and riddles. The Ma Liping textbook was widely adopted in many Chinese community schools. For each book, a key word list based on the students’ instructional levels was provided. As a result, it was easy for a teacher to trace how many words the students were expected to know after they finished the Ma Liping program. The Ma Liping textbook that Ms. Hen used in the 2009 academic year contained about 305 new Chinese characters.

3.2 Stories Used in the Study

Thirteen stories were used in the study and those stories were co-authored by Ms. Hen and me. When we started to write stories for the study, Ms. Hen lent me the Ma Liping textbooks they had used the previous two years. These textbooks helped me to understand the students’ instructional levels in reading and writing. According to the textbooks, the students had learned at least 500 to 600 Chinese characters and had learned basic Chinese grammatical rules. They had also learned to use the pinyin system. After I knew their instructional levels, we started to find topics that might interest the students. Then I wrote drafts for 13 stories and asked Ms. Hen to revise them. Each story was 150 to 200 words. These Chinese stories were based on well-known Chinese or American folk stories, students’ life experience, and the current events. Each story asked students to solve a problem or an ethical dilemma encountered by the main character in the stories.

Each story was revised as necessary. We carefully monitored the students’ responses to previous stories in preparation for revising the next story if necessary. We abandoned the stories in which the social contexts were remote from their life
experiences. For example, we found that in the discussion of Story 2, Ms. Hen needed to spend a lot of time introducing the historical and geographical characters of ancient China because the students did not know them very well. Story 2 “河神” (The River God) introduced an inhuman cultural custom in ancient China. People who lived on the southern side of the Yellow River (Henan Province) would marry a young virgin to the river god by casting this girl to the river. After reading the story, most of the students wondered why people would want to sacrifice an innocent girl just for preventing the river god flooding the Yellow River. To answer their question, Ms. Hen needed to spend a lot of time explaining how the flood caused devastation to the residents along the river and talking about the religious belief in ancient China.

The discussion of Story 2 made us aware of the importance of students’ background knowledge for the discussion. As a result, Ms. Hen and I decided to revisit the stories from Story 3 to Story 13 to see if they were based on students’ life experience. We removed the ones that were irrelevant to their life experiences and wrote new stories based on a Chinese-American teenager’s life experience. For instance, in Story 11, we wrote a story which was inspired by a bestseller “Battle Hymn of the Tiger Mother” authored by Amy Chua (Chua, 2011). In our story, a Chinese-American student named “Xiao Zhi” faced the dilemma of deciding to hang out with his friend or do what his mother asked him to do—stay at home and study all day. His mother had high expectation for him and his mother thought the only way to succeed was to study hard and get good grades and go to a good college. However, Xiao Zhi also felt the need to make friends with his classmates by attending their parties and having fun with them. Before teaching Story 11, Ms. Hen told the students that this
story was inspired by the book “Battle hymn of the tiger mother” (Chua, 2011) and she told students what the book was about. Ms. Hen received positive feedback from the students. Michael, who was undergoing the process of applying to colleges in his last year of high school, started to share how his parents’ high expectation made him stressful. He also stated that he had read some comments about this book and he thought what Amy Chua said was ridiculous. Michael’s feedback promoted enthusiastic discussion among the students, who also had similar problems in facing stern parents who restricted them from participating in extracurricular activities and expected them to get good grades. Parents’ expectations in Chinese-American families became one of the main topics of discussion (Observation-Story 11, February, 27, 2011).

Following is a sample story that we wrote for the students. This story is Story 9 and tells about a bullying event that occurred in an American high school. The story is 146 words in length and contains a simple story plot and two main characters.

造謠

小梅和莉莉是好朋友。莉莉長得又漂亮，成績又好，所以很多女生嫉妒她。

有一天，小梅聽到其他女生到處告訴別人莉莉曾經未婚懷孕。小梅聽了很生氣，要其他女生不要再說莉莉的壞話。其他女生不但不聽，還跟小梅說：「如果妳敢把這件事情告訴莉莉，我們就要妳好看！」

小梅很苦惱，不知道該不該把這件事情告訴莉莉。

(Translation: Slander)
Xiao Mei and Li Li are good friends. Li Li is pretty and smart. Therefore, many girls are jealous of her. One day, Xiao Mei heard that other girls were gossiping that Li Li was pregnant. Xiao Mei was angry about their unfaithful slander so she told other girls to stop gossiping about Li Li. However, not even listening to Xiao Mei, the other girls threatened Xiao Mei not to tell Li Li what they were talking about. Now Xiao Mei is distressed and confused. She doesn’t know if she should let Li Li know that the girls were gossiping about her.

Table 1 shows the information about each story, and the dates that the story sessions were held during my study.
### Table 1  Stories Used in the Study and Dates of Discussions

<table>
<thead>
<tr>
<th>Story</th>
<th>Title</th>
<th>Date</th>
<th>Theme</th>
<th>Topic</th>
</tr>
</thead>
<tbody>
<tr>
<td>Baseline sessions</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>1</td>
<td>奖学金 (Scholarship)</td>
<td>Sep.26</td>
<td>Social equity</td>
<td>Students’ life experience</td>
</tr>
<tr>
<td>2</td>
<td>河神 (The River God)</td>
<td>Oct. 3</td>
<td>Family love / Social equity</td>
<td>Chinese folk story</td>
</tr>
<tr>
<td>3</td>
<td>出國留學 (Study Abroad)</td>
<td>Oct. 10</td>
<td>Family love / life plan</td>
<td>Student’s life experience / Social news</td>
</tr>
<tr>
<td>4</td>
<td>作弊 (Cheating)</td>
<td>Oct. 17</td>
<td>Social equity</td>
<td>Students’ life experience</td>
</tr>
<tr>
<td>5</td>
<td>車禍 (Car Accident)</td>
<td>Oct. 31</td>
<td>Sympathy to the ones who need help</td>
<td>Social news</td>
</tr>
<tr>
<td>Intervention sessions</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>6</td>
<td>偷錢 (The Thief)</td>
<td>Nov.14</td>
<td>Sympathy to the ones who need help / the justice of the law</td>
<td>Social news</td>
</tr>
<tr>
<td>7</td>
<td>強盜 (The Robbers)</td>
<td>Dec. 04</td>
<td>The value of life</td>
<td>American folk story</td>
</tr>
<tr>
<td>8</td>
<td>安樂死 (Euthanasia)</td>
<td>Feb. 6</td>
<td>Family love</td>
<td>Social news</td>
</tr>
<tr>
<td>9</td>
<td>造謠 (Slander)</td>
<td>Feb. 13</td>
<td>Friendship</td>
<td>Students’ life experience</td>
</tr>
<tr>
<td>10</td>
<td>成績 (Grades)</td>
<td>Feb.27</td>
<td>Parents’ expectation / Friendship</td>
<td>Students’ life experience / Social news</td>
</tr>
<tr>
<td>11</td>
<td>該不該說？ (Should tell or not?)</td>
<td>Mar. 6</td>
<td>Social value</td>
<td>Students’ life experience</td>
</tr>
<tr>
<td>12</td>
<td>誠實？欺騙？ (Should I Be Honest?)</td>
<td>Mar. 13</td>
<td>Friendship</td>
<td>Students’ life experience</td>
</tr>
<tr>
<td>13</td>
<td>棄養 (Abandon)</td>
<td>April 3</td>
<td>Family love / The love to the pets</td>
<td>Students’ life experience</td>
</tr>
</tbody>
</table>
3.3 Design and Procedure

The design of my study was a two-phase A-B single-subject experimental design. There were 13 weekly sessions: the first five weeks were the “baseline period” (A), and the following eight weeks were the “intervention period” (B). In the baseline period, I asked Ms. Hen to use her usual approach to lead discussions; in the following eight weeks, I asked Ms. Hen to use CR to conduct discussions. In both non-CR and CR sessions, Ms. Hen would pose a central question concerning a dilemma faced by a character in the story to initiate the discussion. Both non-CR and the CR discussions were approximately 20 minutes in duration.

3.3.1 Baseline

The baseline period lasted from September 26, 2010 to October 31, 2010. During the baseline, Ms. Hen led five discussions. After Ms. Hen dismissed her class, at the end of each session, I would ask two to three students to stay with me in the classroom and complete several oral tasks. Each student was required to complete two oral tasks per session in the baseline period and four oral tasks in total in the baseline period. The oral tasks for each student took 10 minutes per sessions.

In each session, Ms. Hen led the discussion after she finished introducing new key words, sentence structures, and story plots. It should be noticed that in the non-CR discussions, Ms. Hen tended to interject her mini-lessons or drills between the conversations if she found the students got confused about the definition or use of key words.

3.3.2 Intervention
In previous studies of CR, the researchers followed specific steps in training teachers to use CR in their language art classes (e.g. Anderson, 1998; Anderson, et al., 2001; Chinn, Anderson & Waggoner, 2001; Kim, Anderson, Nguyen-Jahiel & Archodidou, 2007; Li et al., 2007; Nguyen-Jahiel, Anderson, Waggoner & Rowell, 2007; Reznitskaya, 2007). The teachers participating in the studies would be given a one or half-day training program before the research started. They would be shown the principles, steps and strategies for conducting CR discussions. They also watched video clips that exemplified CR discussions. They were then invited to play the role of students and participated in a CR discussion under the instruction of the researchers. Finally, they discussed with the researchers how the CR discussion approach could be incorporated into their regular instructional practice. Some studies mentioned that the teachers would develop their own teaching strategies to facilitate the discussions based on his or her teaching styles and the specific classroom situations (e.g. Anderson et al., 1998; Nguyen-Jahiel, Anderson, Waggoner & Rowell, 2007). The stories used to conduct CR discussions were provided by the researchers and were new to the students. If the teachers judged the stories were too difficult to the students, they used teaching strategies such as read aloud or buddy reading to help the students acquire information from the stories before the CR discussions started (e.g. Anderson et al., 1998).

In my study, Ms. Hen and I decided to use direct instruction to help the students to acquire information from the texts before they engaged in CR discussions, (this is what she did in the non-CR sessions). Before the CR sessions, Ms. Hen first had the students read the story silently (cf. Anderson, 1998; Anderson, et al., 2001; Kim,
Anderson, Nguyen-Jahiel & Archodidou, 2007; Reznitskaya, 2007). Then she introduced the new words, phrases and sentence patterns of the text to the students before they had the discussion. However, no mini-lessons or drills that would interrupt the flow of the students’ conversations in the CR sessions were used.

After the last non-CR session, I hosted a 2-hour training session to help Ms. Hen learn how to conduct CR discussions before she started the CR sessions. In my training sessions, I wrote a template introducing the principles of CR discussion and describing particular strategies that could be used to elicit the students’ responses. Before the training sessions, I had Ms. Hen read this template. After she read the template, Ms. Hen discussed her questions with me. We watched a video of CR discussion together and discussed the differences between her original discussion format and the CR format demonstrated in the video. I also asked Ms. Hen to familiarize herself with the skills of modeling, prompting, clarifying, summarizing, and encouraging to promote students’ independent thinking and self-management of turn taking (Anderson, Chinn, Waggoner, & Nguyen, 1998; Clark et al., 2003).

My template was based on the description of CR by Clark et al. (2003). According to Clark et al. (p.184), the teacher is advised to take the following steps when conducting CR discussion:

1. After the class reads the day’s story, a small group comes together for a discussion, and the teacher reviews the principles listed below.

2. The teacher (or a student) poses a central question concerning a dilemma faced by a character in the story.

3. Students choose their positions by raising their hands. The students who are
not sure of their positions can signify that they have not made up their mind yet.

4. Students expand on their ideas, adding reasons and supporting evidence from the story and everyday experience.

5. Students challenge each other’s thinking and ways of reasoning.

6. At the end of discussion, a final poll is taken to see where everyone stands in relation to the central question.

7. Finally the teacher helps students to reflect on the discussion by using “Debriefing” and make suggestions on how to improve future discussions.

Furthermore, to facilitate the conversation, the teacher has students review certain rules at the beginning or end of the discussions (Clark, 2003, p.184-185).

These include:

1. Try to stick to the topic.

2. Think critically about ideas, not about people.

3. Remember that we are all in this together.

4. Encourage everyone to participate.

5. Listen to everyone’s idea, even if I don’t agree with them.

6. Try to understand both sides of the issue.

7. Restate what someone has said if it is not clear.

My template also included the teacher’s moves for facilitating discussion as outlined by Anderson and his colleagues (Anderson et al., 1998; Nguyen-Jahiel et al., 2007; Waggoner et. al, 1995). These are:

1. Prompting
Ask students for a position, a reason, evidence, or evaluation. Prompting is most useful when students are just learning how to discuss reflectively.

2. Modeling

Demonstrate reasoning by thinking out loud in front of the students. Modeling is useful when students do not seem to grasp particular skills.

3. Asking for clarification

Ask students to clarify what they mean. This strategy helps students become more precise about their language.

4. Challenging

When students make an assumption that is not warranted, challenge students by providing an alternative opinion.

5. Encouraging

Encourage students by acknowledging and praising their progress in thinking. The encouragement should recognize students’ effort, and include words like “reasons”, “evidence”, “opinion”, and “position”.

6. Summing up

Periodically sum up what students have said. Summarizing helps students keep track of the argument. Sometimes you can ask students to summarize for you.

7. Fostering Independence

Help students take as much of responsibility as possible for carrying out the discussion. For this to happen, it is important to get students to talk to each other.

8. Debriefing
While the students are debating among themselves, the teacher takes notes detailing their positions and the manners in which they are presented, as well as how often the students participate. At the end of the discussion, the teacher reviews his/her notes with the students, evaluating their performance and providing them with concrete goals for future discussions.

When Ms. Hen discussed her questions about the CR sessions with me, she noted that she could not tell the difference between CR discussion and her original discussion format in the non-CR sessions. To answer her question, we watched some of her own videotaped discussions in the non-CR sessions and compared her instruction with the teachers’ instruction in the CR videos. I drew Ms. Hen’s attention to the different interactional patterns between the teacher and the students in the CR videos and I pointed out that the open-ended questions and open participation structure shown in the CR videos were different from the questions she asked the students and the participation structure in her regular discussions. I further explained that the open participation structure was preferred in the CR discussion. Moreover, I had Ms. Hen go through the steps and moves in my template and explained to her that she should try to play a different role in CR discussion. After listening to my explanation, Ms. Hen expressed her concern about transitioning to CR. She was worried about changing her style of leading discussion. To ease her anxiety, I had a short conversation with Ms. Hen after each CR session to talk about her skills in leading discussions. Ms. Hen told me that she had difficulties on conducting CR discussions in the first two or three sessions. She stated that “at the beginning, it’s really hard to follow students’ flow because their logic is very difficult
to understand. And I always lost the chance to ask them questions……Moreover, I really want to share something with them, but I can’t talk too much in the CR discussion” (Teacher-Phone interview, February, 28, 2011). However, as time went by, Ms. Hen became more comfortable and gradually reduced her dependence on my advice.

I also introduced the CR format to the students before they had their first CR discussion. To introduce CR, I asked Ms. Hen and her students to came to class 30 minutes earlier than usual before the first CR session started. I gave each student a handout introducing the purposes, the characteristics, the steps and the principles of CR and made a brief 10-minute presentation about CR. I asked if anyone had learned about CR or any other discussion approaches before. In answer to my question, Michael replied that he had one or two discussion in his language arts class but that they were not called CR and the format of the discussions was quite different. I asked him to describe the discussion he had in his language arts class but Michael didn’t say too much about it. He simply stated “Umm. Just a discussion.” (Observation-Story 6, November, 14, 2010).

After Michael shared his experience, I reported what I had observed in their discussions in non-CR sessions. I told the students: “In non-CR sessions, Ms. Hen was the leader of the discussion and she was ready for solving any questions you have. But things will go different in CR discussions. In CR discussions, Ms. Hen will participate in the discussions only if she feels the need to give you some hints. You are the leaders of the discussions, not Ms. Hen.” (Observation-Story 6, November, 14, 2010). I also stated that “according to the principles of CR, everyone is expected
to listen to one another carefully. Try not to interrupt if someone is speaking” (Observation-Story 6, November, 14, 2010). I then asked them to share their thoughts about what behaviors would not be encouraged in CR discussions. I also asked them to compare and contrast the discussion formats in CR and non-CR sessions. When I finished my introduction to CR, Ms. Hen stood up and read the principles of CR aloud to the students and asked if they had any questions about the principles. Then Ms. Hen told the students that she would have them review the principles before each CR discussion (Observation-Story 6, November, 14, 2010).

The CR sessions started after the training programs for Ms. Hen and her students. In each CR session, Ms. Hen would first restate the principles of CR that I introduced in the training session and then ask students to take a position on the central question before they stated their arguments. After the discussion, Ms. Hen would provide a brief comment on the students’ discussion skills and asked if the students wanted to change their positions.

At the end of each non-CR and CR session, two or three student was asked to complete oral tasks. The procedure used for training the students to do the oral tasks can be found in Section 3.4.3.

3.3.3 Instructional practices during the study

Both the baseline and intervention period, Ms. Hen adopted almost the same strategies to introduce the key words, sentence-patterns and story plots before discussions. When students came to class and received the one-page handout written in simplified Chinese and marked with pinyin, Ms. Hen would ask the students to read the text silently by themselves. Then she would read it aloud for
them. She knew that Larry and Emily had better oral communicative competence in Chinese than Olivia and Michael, because they had more opportunities to use Mandarin when they helped their parents with the business in their Chinese restaurant. In contrast, Olivia and Michael performed better in Chinese reading and writing, rather than speaking and listening, because they had spent a lot of time doing their homework. Therefore, she would make sure that Larry and Emily grasped the gist of the story by listening to the read-aloud and Olivia and Michael could get the main idea from their silent reading.

Ms. Hen would also ask students to look at the illustrations in the stories to get some information about the topic of the story. Then Ms. Hen would ask students to read the titles of the story in Chinese. Then she asked students if they knew the literal meaning of the title. She engaged the student in a brief discussion to scaffold the students’ ideas about the literal meaning of the title, and any relevant cultural knowledge. For instance, in the teaching of Story 1, Ms. Hen wanted the students to guess the meaning of the title “獎學金” (The Scholarship). At the beginning, Ms. Hen asked the students “Have you learned 金 before?” students said “no”. Later, Ms. Hen asked students “Have you learned 學 before? ” students said “Yes, that means “learn something.” ” Then Ms. Hen said :“金 means gold. So you learn and you get the gold. What does it mean?” Everyone started to guess. Michael said “motivation?” Ms. Hen said “Close.” Emily said “prize?” Ms. Hen said “close.” Victoria guessed “money?” Ms. Hen said “That’s it. It means scholarship” (Observation-Story 1, September 26, 2010). Next, Ms. Hen would give some hints about the plot by
reminding them about the relevant cultural knowledge they had learned previously. For example, when Ms. Hen asked students their opinion about the topic “The thief” (小偷) of Story 6, Ms. Hen explained that in Chinese culture, the behavior of “stealing” always considered “sneaky”. Therefore, Chinese people would use the adjective that means “tiny, convert” (小) rather than the adjective that means “huge, arrogant” (大) to describe a thief (Observation-Story 4, November 14, 2010). She also cared about students’ interpretation of the title. As a result, after she explained the literal and inferential meaning of the title, Ms. Hen would sometimes ask her students to have a discussion about the title. This kind of discussion occurred during her teaching of Story 9 “造謠” (Slander). Before Ms. Hen started the teaching of the story, she asked students “Do you 嫉妒 (envy) anybody?” (Observation-Story 10, February 13, 2011). Then Ms. Hen shared her experience of envying somebody else. Provoked by Ms. Hen’s sharing, the students started to talk about their experience envying somebody and their experience of being bullied in their school life. After that, Ms. Hen asked the students to think of the possible plot of Story 10 before she read it.

When the students grasped the gist of the story by reading through the title, Ms. Hen would draw a table which listed who (誰), when (時間), how (事件), where (地點), other (其他) and asked the students to do the silent reading again. Then she let the students read the story aloud and translated the new phrases or new words for the students. After that, Ms. Hen asked students to complete the table with her. She wanted students to complete the table based on what they had read. To make this
activity more like a game, Ms. Hen sometimes let the students roll a dice or draw lots to determine who went first to fill in the table.

In the first few story sessions, Ms. Hen simply asked students to say what they found in the text and Ms. Hen was the one who wrote on the board to fill the table. However, toward the end of the 13 sessions, Ms. Hen started to pair up the students and asked them to discuss the story with each other. Then Ms. Hen asked them to come to the board and to write down what they found by themselves (Observation-Story 14, April 3, 2011). When Ms. Hen worked with the students to complete the table, she encouraged students to get involved in the process of knowledge construction. Everyone needed to say one comment about the story. It could be anything the students understood from the silent reading, Ms. Hen’s read aloud, or anything that came to their minds. Ms. Hen wrote down what the students said on the blackboard and discussed with them about their comments.

When Ms. Hen introduced the story to the students or new key words, phrase or sentence patterns, she tried to involve the students in the process of constructing knowledge about the story. She gave students time to find the right answer and tried not to intervene too much until she felt the need to provide clues. A good example is in their discussion of Story 5. The Story 5 “車禍” (car accident) described a driver who witnessed two car accidents on different nights. In the first accident, an old lady was hurt and laid on the side of road and the driver immediately drove her to the hospital. However, after the lady came to consciousness, not only did she fail to express her appreciation for the driver’s help but she accused him of hitting her. The driver was deeply hurt by this and became reluctant to help people. However, on
another night, this driver happened to witness another car accident in which a little child was hurt. Then the story asked if this driver should help this child or not. In the beginning, most students thought there was only “one” car accident. Michael said the car hit an old woman but Larry pointed out that, based on what he heard from Ms. Hen’s read aloud, the victim was a child. Michael looked at Larry and shook his head. At this time, Ms. Hen did not give feedback to either Larry or Michael’s but went ahead to ask students to identify the characters mentioned in the story. Emily then said “a kid.” Ms. Hen praised her and then wrote her answer on the board. Michael then pointed to the picture in which an old lady laid on the road and a man was taking care of her and said “What a minute, that’s a kid?” Ms. Hen still said nothing about Michael’s response but asked students to say something about the time the events occurred. The students found the phrase “有一天” (one day) and told the teacher that was the time the car accident happened. Ms. Hen realized the students had failed to notice another phrase in the text which indicated the time that the second car accident occurred. She then asked the students to pay attention to this phrase “又一天” (another day) and asked students “What does 又 mean? ” “When will you use that?” The students then raised some examples like “我又吃蘋果了” (I ate an another apple). The teacher then spent some time explaining the usage of “又”. Then she asked students “so what does 又一天 mean?” The students then realized that “又一天” meant another day. Then Emily asked “So this person hurt two people?” The teacher then said “No, it just said two people were hurt at two different nights.” Her answer prompted the students to read the story again (Observation-Story
Ms. Hen also drew on multiple resources in her teaching of stories. For instance, to ask students to write pinyin and Chinese characters on the homework sheets, Ms. Hen introduced four websites to students which contained tools, animations and games to help new Chinese learners became familiar with the rules for pronouncing four tones and pinyin. To encourage students to use the websites, Ms. Hen sometimes allowed students to use her laptop during the class to play games or watch animations on the websites.

Ms. Hen had mini lessons and drills in reading, writing, and conversation practice before discussions. The mini lessons and drills were sensitive to the social context in the class and the students’ individual differences. For example, when students asked Ms. Hen to leave some space for them to pass through the door, Ms. Hen said: “You should say 借過”. Ms. Hen explained that 借過 meant “excuse me” when you need to ask somebody’s permission to pass by. The word 借 means “borrow” and 過 means “pass”. Ms. Hen then explained how this phrase is used in different contexts. Then Ms. Hen asked students to use 借 to make sentences by “borrowing” something from each other (Observation-Story 12, March 6, 2011).

Ms. Hen also asked students to share their strategies for reading and writing with each other. For example, in their mid-term exam, Ms. Hen asked everyone to choose one paragraph from the stories they had read before and to read it aloud so Ms. Hen could grade their pronunciation and fluency. She noticed that Larry did a good job reading the story. Ms Hen said: “I found Larry did a good job and Larry
corrected himself several times. I’m wondering how he did it”. Hearing what Ms. Hen said, Emily raised her hand and said: “I read alone with him when he reread it. I will correct him if what he said didn’t make sense”. Ms. Hen praised Larry and Emily and she indicated that the “j” sound was very difficult for most of the students (Observation-S5-October 31, 2010). She also praised Michael and Olivia for their reading and writing; both of them loved to read and knew many Chinese characters. Encouraged by Ms. Hen’s word, Michael said: “I tried not to rely on pinyin when I read the story” (Observation-Story 11, February 27, 2011).

Ms. Hen also integrated concept maps in the teaching of stories. For example, after Ms. Hen had students read Story 9, she told them the central question to discuss after the break. Then she asked students to draw concept maps to portray their opinions about this question and how they would solve the moral dilemma if they were the main character in the story. Ms Hen first modeled how to draw a concept map on the board to illustrate her own plan for spending Valentine’s day with her friends rather than her husband. Students were pleased to see her drawing and become enthusiastic to draw their own concept maps. When students were drawing their concept maps, Ms. Hen walked around to help them to complete their maps and asked them to add phrases or key words from their reading materials. After that, Ms. Hen asked students to share their concept maps with everyone (Observation-Story 9, February13, 2011).

To help the students use their English ability in understanding a Chinese phrase. Ms Hen sometimes asked assistance from the students. For example, in the discussion of Story 5, Ms. Hen said: “I don’t know how to translate “誣賴” in
Emily said: “Wait, wait…does it mean like blamed?” then she suggested: “Go, go, go to the Google translation.” Ms. Hen shook her head and said “I need your help”. Then students started to guess “like blamed again,” “snitch on?”

Ms. Hen said so “譴 means mistake and 賴 means blame?” Emily then read the sentence again and said “how about mistakenly blamed?” Ms. Hen said “Mistakenly blamed? Hmm.” and other students said “Well, that’s it!” (Observation-Story 5, October 31, 2010). A similar thing happened in the teaching of story 12 when the teacher had difficulty explaining the phrase “惱羞成怒” (nǎo xiū chéng nù) in English, which describes the anger that a person experiences when he or she feels embarrassed or shamed (Observation-Story 12, March 6, 2011). Ms. Hen tried to find an idiom in English that describes the same psychological condition but she was unable to do so. Then she asked students what they would say if they needed to translate this phrase. Students provided several adjectives and the contexts in which they would use them. And students cooperated with teacher to find the English translation of “惱羞成怒” on the website.

After filling out the table, Ms. Hen used a lot of drills to have students orally practice key words or sentence patterns. Most of the drills involved sentence-making. However, unlike what she did in her teaching of Ma Liping’s textbook, Ms. Hen would tell stories about Chinese culture and provide additional information about the phrases that Chinese speakers would use in some specific contexts. The sentence patterns or phrases that Ms. Hen provided in the drills were mostly drawn from the story they read, the current situation or activities that occurred in the classroom or
students’ private chatting on that day. For example, when Ms. Hen taught Story 8 on February 7, 2011, the Chinese school had just held a ceremony for the Spring Festival and asked students to wear red when they came to school. During the classes, Ms. Hen distributed red envelopes to the students. Then Ms. Hen asked students: “你今天拿了多少红包?” (How many red envelopes have you got today?). After each student answered this question, Ms. Hen wanted them to ask each other the same questions for practice. She reminded the students that it is a very common question that people would ask each other during the Spring Festivals.

After having students browse through a story, Ms. Hen might have some discussion of the cultural issues related to the story. She compared different interpretations of morality in Chinese culture and American culture. Ms. Hen stated “….Naturally, more topics about cultural concepts or values appeared in our discussion. The things I want to teach them are far more than just sentence-patterns, or new vocabulary. I want them to know what Chinese and Taiwanese people thought about their lives. I want them to know that what Chinese people will do or what Taiwanese people will do in certain conditions. I tried to expand their horizon on Chinese culture and I wanted them to reflect on how different cultures are in China and United States.” (Teacher-interview, November 1, 2010). For example, in the discussion of Story 10, after the students shared their experience on being expected to get good grades, Ms. Hen explained how Chinese people related “success” to the concept “hard work.” Chinese parents never attribute their children’s poor performance to their talent or environmental problems but to the time and effort that
the children spend studying. Then Ms. Hen concluded: “In Chinese culture, learning disability means laziness” (Observation-Story 10, February 27, 2011). A similar discussion can be also occurred in the teaching of Story 1 “Scholarship.” Ms. Hen explained that in Chinese culture, the scholarship is usually given to the “best” student, not the one who needs it. Then students started to discuss what kind of students would be nominated for the scholarship in the United States. Then the students all agreed with what Michael said “in the U. S., only the bad students can get the scholarship.” Still another example was in the teaching of Story 6, after Ms. Hen read the story about a father who stole money from a store because he needed to buy medicine for his dying daughter. Ms. Hen asked students: “Tell me, in your culture, is stealing money from your mom very serious?” To answer to the question, the students told her their stories and their parents’ stern attitudes toward children’s misbehavior. Then Michael said: “But an American family would say “Oh! That’s OK! They would get away with that!” . Provoked by Michael’s response, Ms. Hen engaged the students in a discussion about how Chinese-American children, their cultural values might conflict with those of their parents.

3.4 Data Source and Collection

3.4.1 Participant observation

My participant observation took place once per week in the classroom for 13 weeks from the end of September, 2010 to mid-April, 2011. Sometimes the class was cancelled due to winter breaks or sports day or Chinese cultural performance days. When the class was cancelled, I either helped with the celebration events or did not show up. I made my official observations only when the language class was held.
Each class lasted approximately two hours. I was with the class from 1:00 pm to 3:30 pm until Ms. Hen dismissed the class. During my observation, I took field notes on my double-entry notebook about the instructional events occurring in the classrooms. I quickly sketched the setting of the class, casual talk between the teacher and the students, Ms. Hen’s arrangement of classroom activities, and the pattern of social interactions between Ms. Hen and her students. I also wrote down my reflections in the margin of the notebooks. My field notes focused on the teacher-student and student-student interactions, their social relationships with each other, and their working habits and routine instructional events. After the class, I immediately typed my field notes in a word processing program and then imported them into NVivo 8 (QSR International, 2009), a qualitative data analysis software that allowed me to manage my data and conduct data analysis. Most of the time, I produced five to six pages of notes. My reflection notes helped me to gain insight into how the students reacted to Ms. Hen’s arrangement of class activities, and how Ms. Hen adopted different kinds of participation structures to create space for students’ participation in the various instructional activities.

All 13 sessions were video-taped and audiotaped. The video-taped classroom activities totaled about 26 hours. I transcribed the classroom discourse by means of a transcription freeware, Douzi (豆子謄稿機), and imported the transcribed classroom discourse into NVivo 8 (QSR International, 2009).

3.4.2 Interview

I conducted two interviews with Ms. Hen to understand her teaching style and experience. The first interview was a semi-structural interview conducted on
November 11, 2010. The aim of this interview was to ask about Ms. Hen’s teaching philosophy and instructional strategies in the teaching of Chinese and how she viewed each student’s learning experience in the Chinese community school. We also talked about her views of the students’ learning styles in learning read and write Chinese. The questions asked during this interview are shown in Appendix 3. The second interview was an unstructured, phone interview held on February 28, 2011. In this interview, Ms. Hen talked about the change in her instructional strategies after the CR sessions were introduced. She also mentioned her feelings about the effect of CR sessions in promoting students’ reading abilities. These audio-taped interviews were transcribed by me and imported to Nvivo8 (QSR International, 2009) for analysis.

3.4.3 Think-alouds

In this study, a think-aloud procedure was used to examine students’ reading strategies during reading. Think-alouds are considered an appropriate methodology for investigating students’ cognitive processes by verbal report and they have been widely used to investigate reading strategies (Kucan & Beck, 1997). It is argued that the proper use of think-aloud protocols will elicit the readers’ verbalization of the content of his or her short-term memory (Pressley & Afflerbach, 1995; Someren, Barnard, & Samdberg, 1994). However, there are some concerns about the methodology. These concerns relate to “what is requested of subjects and when it is requested” (Pressley & Afflerbach, 1995, p.3) and the interruption caused by the think-aloud procedure to the process being studied. As a result, scholars suggest that users of think-aloud protocols should be very careful about the types of questions
that are asked during the procedure (e.g., avoiding “why” questions that might prompt the reader to use their long-term memory) (Pressley & Afflerbach, 1995) and the timing of the prompts to readers to verbalize their thought (i.e. concurrent versus retrospective) (Afflerbach, 1990; Kuusela & Paul, 2000; Pressley & Afflerbach, 1995; Someren, Barnard, & Samdberg, 1994). With regard to the prompts in the procedure, some researchers argue that a retrospective think-alouds will encourage the readers to draw inferences from long-term memory, thus producing bias in the information gained about the reading process. In other words, in retrospective think-aloud protocols, people may not report the thoughts that they had and will report false memory -- thoughts that they cannot have had at that time (Someren, Barnard, & Samdberg, 1994). By contrast, a concurrent think-aloud might provide more insight into the decision-making occurring during the reading process (Camps, 2003; Kuusela & Paul, 2000). Hence, the information gained is considered to more accurately reflect the ongoing reading process (Afflerbach, 1990; Pressley & Afflerbach, 1995; Someren, Barnard, & Samdberg, 1994). However, it is also argued that a concurrent think-aloud have the risk of disturbing the readers’ thought process, thus causing errors and misinterpretations (Camps, 2003; Someren, Barnard, & Samdberg, 1994).

Generally speaking, a concurrent, rather than retrospective think-aloud is recommended by many scholars because it is more likely to yield a direct reflection of reading process (Afflerbach, 1990; Block, 1986; Camps, 2003; Pressley & Afflerbach, 1995 ; Someren, Barnard, & Samdberg, 1994) However, some scholars recommend having data from both resources and using the data from the
retrospective think-aloud as complementary information (e.g., Camps, 2003).

The think-aloud procedure used in this study was a concurrent, prompted think-aloud. The prompted think-aloud procedure consisted of two components: the read aloud of the text and the reporting of reading strategies. To proceed, I asked the students to read each sentence of the text out loud, one sentence at a time. Once the student finished reading each sentence, he or she immediately reported any difficulties in reading the text and their strategies for solving the problems. Using sentence as the analytic unit, the student’s read loud was analyzed in terms of reading rate (see formula 3.2), where the time that the student used to read aloud was calculated separately from the time he or she spent reporting on reading strategies. To assess the student’s reading strategies, I also wrote down the student’s reading behaviors in the margins of my notebook as supplementary clues. After the student finished the prompted reading task, I immediately expanded my records of their reading behaviors on the form that I designed for recording their reading strategies. The protocol used is shown in Appendix B. The tool for analyzing students’ reading strategies can be found in Table 8 and section 3.5.2.

If the students were silent during the prompted think-aloud procedures, I would ask several probe questions to obtain students’ response. The questions that I asked to prompt the students can be found in Appendix B. The questions were based on the taxonomy developed by Pearsons and Johnson (1978) and later modified by Raphael (1985). The three category taxonomy included text explicit questions (TE), text implicit questions (TI), and script implicit questions (SI). According to Raphael (1984, 1985), a TE question is basically a literal question, which has an answer
explicitly stated in the text; a TI question requests information that is available in the text but requires the reader to integrate information across sentences or paragraphs; a SI question requires the reader use his or her prior knowledge in concert with the text to answer the question.

I followed the procedure developed by Afflerbach (1990) and Meyer (1990) to conduct students’ think alouds. In the written text of each story, I inserted visual prompts (blue marks) at the end of every sentence to signal the students to stop and give a verbal report about what they are doing or thinking about while attempting to understand the sentence. In addition, I inserted prompts at the end of each paragraph to ask students to give a main idea statement for each paragraph. The reason for inserting visual prompts was to ensure students reported “online” during the reading. In addition, the visual prompts were used to help students report the contents of their working memory rather than to reconstruct the statements from their long-term memory (see also Pressley & Alfferbach, 1995).

Before the discussions started, I conducted two training sessions to prepare students for the think-aloud task. The training sessions were held in the first and the second week of the semester. After the teacher dismissed the students from the language classes, I asked the students to practice thinking aloud with two stories they had read previously in Ma Liping’s textbook. The sample stories were about the same length as the stories used in non-CR and CR sessions and each story had illustrations just like the stories used in the non-CR and CR discussions.

In the first session, I taught the students how to give a self-report about their reading strategies during the prompted reading. They were told that if they did not
comment spontaneously or their comments required clarifications, I would prompt them with some questions. The questions that I used to prompt their think aloud procedure can be found in Appendix B. I demonstrated to the students how to do the think-aloud task by using the first paragraph of the first sample story. Following is an excerpt of my words when I modeled the think-aloud process.

*R*: (read aloud the first sentence of the text). *Umm. There is a simplified Chinese character in the sentence that I am not familiar with. I don’t know what does “農” mean. But it seems like the word “農” is a part of the phrase “農夫” and I know what “夫” means. Let me see. I guess the sentence is about a man encountering a snake on the side of a river. And the snake was frozen to death. I can tell it from the picture. I guess the phrase “農夫” is to describe the man’s occupation or status. That’s how we describe a man in Chinese. The man wore a hat and his dress does not look like a doctor “大夫”, so he is probably a peasant “農夫”. So I guess the word means 農. And the phrase “農夫” means peasant.” (Transcript-September 19, 2010).

After my read aloud, I asked students what I was doing. Olivia said “guess?” (Transcript-September 19, 2010). I replied to her: “Yes. I am guessing. But what I do is not only to guess. I am showing you how I guess the word. I want to teach you how I guess it. And you know, in your think-aloud tasks, when you encounter some words you don’t know and you have your ways to deal with that. I need you to teach me, too. How you teach me your way to read the text is just like what I do. So please describe to me how you solve your problems step by step.” (Transcript-September 19, 2010)

To make them more clear about how to do think-aloud tasks, I asked students to use the second paragraph of the sample text to practice each step of the think-aloud procedure and gave feedback to their practice. For example, when Larry
read aloud the sentence “蛇的身體暖和起來了 (The snake was getting warm)”, I noticed that he omitted the phrase “暖和” (warm) in his read aloud and did not report his problem with the phrase “暖和” (warm) in his think aloud. I prompted him by asking “Do you have any difficulty on any word?” Larry said “no.” I further stated “I noticed that you don’t read the phrase here (showing him the phrase 暖和 on the handout). Do you have a problem with the phrase?” Larry said “Maybe it means live.” I asked him “How do you know that?” He said “You said the snake was dying. Now it’s in the peasant’s coat. He made the snake live again.” (Observation-September 19, 2010)

After practicing the think-aloud tasks, the students were asked to reflect on the processes they used in reading the sample story. I stated that I was not concerned about how many words they knew, and that what I was concerned about was how they deal with the unknown words in their reading. The students did not do very well in the first training session. Therefore, in the second training session on September 26, 2010, I asked each student use the second sample story to practice the think aloud procedure. Everyone read aloud the text in turns and described their steps in dealing with the difficult words. I gave one-to-one feedback during their practice. If they did not clearly state the steps in their problem-solving procedures, I would prompt them to say more by using the questions in Appendix B. The read-aloud tasks during the training sessions were not scored.

After the training, each student was asked to complete the think-aloud tasks three times during non-CR sessions to allow me to establish a baseline for their
reading strategies. During the CR discussions, each student was asked to complete three or four think-aloud tasks for the stories they read in class.

3.4.4 Oral reading

During think-aloud procedure, I audiotaped each student’s oral reading. After I recorded their reading strategies, I replayed their audio-taped oral reading to record their reading accuracy and reading rate. I wrote down the time that the students spent on their read aloud and the number of correct words. Then I used these data to calculate students’ accuracy and reading rates. I adopted the procedure used in running records (Clay, 2000) to identify the numbers of correct words in their reading. According to Clay (2000), if students correct their error during reading without another person’s assistance, the corrected word is not counted as an error. As a result, in my data, the number of correct words that the students generated in their reading was the sum of the words that the students pronounced correctly on first reading and the words that the students corrected by themselves without my assistance.

3.4.5 Retelling

After the think-aloud, the students were asked to retell as much as they could of the story. Directions for the retelling can be found in Appendix B.

3.4.6 Oral argument task

Finally, after the think-aloud and retelling, the students were asked to express their thoughts about the central question that they had talked about during the discussion. The purpose of this task was to assess the students’ skill in argumentation.
Directions for the oral argument task can be found in Appendix B.

3.5 Data Analysis

Table 2 is a summary of data sources that were utilized to complete my analysis.

Table 2  Data Sources

<table>
<thead>
<tr>
<th>Data</th>
<th>Description</th>
<th>Focus of data analysis</th>
<th>Methods of data analysis</th>
</tr>
</thead>
<tbody>
<tr>
<td>Video-tapes of entire sessions of language classes and observational notes</td>
<td>26 hours of classroom teaching</td>
<td>participation structure</td>
<td>Open coding</td>
</tr>
<tr>
<td>Video-tapes of classroom discussions in non-CR and CR sessions</td>
<td>5 non-CR sessions and 8 CRs sessions; each session lasted 20 to 30 minutes</td>
<td>discursive patterns in discussion; knowledge sources and kinds of reasoning in constructing meaning</td>
<td>Open coding and Coding schemes used by Soter et al. (2008) and Marshal et al. (1995)</td>
</tr>
<tr>
<td>Audio-tapes of think alouds, and reading, oral retelling and oral argument tasks</td>
<td>26 tasks from four students (6 or 7 for each student)</td>
<td>Reading strategies, reading accuracy, reading rate, retelling, and students’ argumentation.</td>
<td>Coding scheme of reading strategies for think alouds</td>
</tr>
<tr>
<td>Interviews with instructor</td>
<td>Two interviews with the instructor; the first was semi-structured interview, the second was unstructured interview.</td>
<td>Teacher’s experience in teaching CHLL students; Teacher’s perception of CR.</td>
<td>Open coding</td>
</tr>
</tbody>
</table>

3.5.1 Classroom discourse in non-CR and CR discussions

The video-taped classroom discussions were transcribed and open coded (Strauss & Corbin, 1994) to produce my analytic induction (Erickson, 1986) toward the data. I imported my field notes and the transcribed classroom discourses in NVivo 8 (QSR International, 2009). Then I recursively visited them to generate my interpretation of the discussions. With the assistance of Nvivo 8, I developed a coding scheme to describe the interactional patterns between the teacher and the students in the classroom discussions. The coding scheme was my initial
understanding of the “key linkage” (Erickson, 1986) among instructional events. Then I revisited my data several times to modify my coding scheme. I refined, merged, or deleted old categories and generated new ones.

The corpus of video-taped story discussions analyzed by means of open coding helped me to determine any changes of participation structure in the classroom discussions. I also used two discourse coding schemes to identify the discourse features that index high-level thinking (Soter et al., 2006, 2008), and the intellectual content of talk (Marshall et al., 1995).

To establish inter-coder agreement in coding the transcribed story discussions, a second coder, a doctoral candidate who specialized in applied linguistics, coded some of the discussions. We randomly chose two discussions, one from the non-CR sessions and the other from the CR sessions. Before we coded independently, I conducted two training sessions for the coder. During the training sessions, I discussed with the second coder the operational definition of each coding category. We also coded some sample excerpts and discussed any discrepancies in our coding. We then coded the two discussions independently.

The first discourse coding scheme was developed by Soter, et al. (2006, 2008). It identifies eight aspects of discourse that index students’ high-level thinking and comprehension. This coding system allowed me to draw from multiple theoretical lenses, including cognitive theory, dialogism, reader response theory, and sociocultural theory, to analyze the nature of the discourse. The coding scheme reflects two dimensions of talk during discussion: the kinds of questions the teacher/students ask and the kinds of reasoning students employ. The categories are
shown in Table 3.

Table 3  Discourse Features that Index High-level Comprehension

<table>
<thead>
<tr>
<th>Discourse Features</th>
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</thead>
<tbody>
<tr>
<td>Teacher turns</td>
</tr>
<tr>
<td>Authentic question (AU)</td>
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<tr>
<td>Uptake (UP)</td>
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<tr>
<td>High-level thinking question (HLT)</td>
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<tr>
<td>Affective response question (AR)</td>
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<tr>
<td>Intertextual reference question (IR)</td>
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<tr>
<td>Shared knowledge question (SK)</td>
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<tr>
<td>Student turns</td>
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<tr>
<td>Authentic question (AU)</td>
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<td>Uptake (UP)</td>
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<td>High-level thinking question (HLT)</td>
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<td>Affective response question (AR)</td>
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<tr>
<td>Intertextual reference question (IR)</td>
</tr>
<tr>
<td>Shared knowledge question (SK)</td>
</tr>
<tr>
<td>Elaborated explanations (EE)</td>
</tr>
<tr>
<td>Exploratory talk (ET)</td>
</tr>
</tbody>
</table>

Source: Soter et al. (2006, 2008)

Table 4 shows the definitions of each discourse feature and excerpts from my data that exemplify these features. It should be noted that these categories are not necessarily mutually exclusive. For example, a question which is coded as a HLT question might also be coded as a part of an ET exchange.
Table 4  Definitions and Examples for the Discourse Features that Index High-level Thinking

<table>
<thead>
<tr>
<th>Feature</th>
<th>Definition</th>
<th>Example</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Authentic Question</strong></td>
<td>Open-end question; speaker is genuinely interested in knowing how others will response. Answer is not pre-specified</td>
<td>T: Have you thought about other possibilities from this article? (Transcript-0403-Story 13)</td>
</tr>
<tr>
<td><strong>Uptake</strong></td>
<td>A question in which there is follow-up about something someone has said before. Often marked by personal pronouns.</td>
<td>M: People know that every year they’re going to come with the start of the year. T: So they’re going to find? (Transcript-1212-Story 7)</td>
</tr>
<tr>
<td><strong>High-level Thinking</strong></td>
<td>High-level thinking marked by analysis, generalization and/or speculation.</td>
<td>E: Why do they need to hide in the cave? Why can’t they flee to somewhere else? (Transcript-1212-Story 7)</td>
</tr>
<tr>
<td><strong>Affective Response Question</strong></td>
<td>Making a connection between text and feelings or events in responders’ own life.</td>
<td>E: So would you like your dog out there killing people? (.) O::r let it die peacefully? (DT—0403-Story 13)</td>
</tr>
<tr>
<td><strong>Inter-textual Response/Question</strong></td>
<td>Making a connection between the text and other texts or works of art, media, TV, newspapers.</td>
<td>V: Or this is a quote that I had (.). Like I’ve read whole bunch of them that I read. I think it fr::om Earth Battle. But it goes like &quot;Those who say don't know but those know don't say&quot; You guys get what the quote means? (Transcript-0220-Story 9)</td>
</tr>
<tr>
<td><strong>Shared Knowledge Response/Question</strong></td>
<td>Making a connection between text and feelings or events in previous discussion or knowledge that has been previously shared.</td>
<td>T: (laugh). 嫁給. Do you remember our story &quot;The mouse and Marriage?&quot; (Transcript-1003-Story 2)</td>
</tr>
<tr>
<td><strong>Elaborated Explanation</strong></td>
<td>Thinking is explained in some detail through extension, building of an idea step-by-step, giving reasons for a statement, or expanding on a statement</td>
<td>E: I’m not going up to the manager be like &quot;Hey, wash your hands&quot; and so (.). And you can't go up to the boss and say he or she doesn't wash their hands. You do have to prove you know. (Transcript-0306-Story 11)</td>
</tr>
<tr>
<td><strong>Exploratory Talk</strong></td>
<td>Co-reasoning where students build and share knowledge over several turns, evaluate evidence, and consider options. Using language to ‘chew’ on ideas, think collectively, Typically contains concentration of reasoning words</td>
<td>O: But what if his mom very scary, if she’s could beat us? L: She has, she has a giant baseball bat= M:=OK, his old mom really couldn’t beat disbehaved boy, it’s an crime. L: It’s called child abuse. (Transcript-0227-Story 10)</td>
</tr>
</tbody>
</table>
Exploratory talk was first identified by Barnes (1975). It is an exchange between the discussants who are collaborating to solve a problem or elaborate an idea. According to Wegerif et al. (1999), exploratory talk is characterized as a social practice in which “reasoning is made visible and publicly accountable through discussion of alternatives, offers as what Habermas calls ‘communicative rationality’” (p.497). Discussants work collaboratively to solve a problem in exploratory talk. They offer and consider possible alternatives, and challenge and counterchallenge each other’s propositions until joint agreement is reached (Mercer, 1996). From Mercer’s point of view, exploratory talks is an activity that engaging a kind of “co-reasoning” to share knowledge, evaluate evidence, and consider alternative and reasonable ways (Mercer, 1999, 2003, 2004). Mercer further stated that the rules of discussion embodied in exploratory talk require an equal opportunity for participation of every discussant. He further stated that the goal of discussion is to reach a mutual understanding of the problem and to find a consensus which acknowledges everyone’s contribution (Mercer, 1996).

Mercer (1996, 2004) and Wilkinson et al. (2006) pointed out that students express engagement in the process of public reasoning in exploratory talk. Furthermore, Mercer explained not all kinds of discussions naturally support collaborative reasoning activities, only exploratory talk accomplishes. Mercer explained that some kinds of discussions, such as “disputational talk” and “cumulative talk” do not support the process of collaborative reasoning. In disputational talk, the discussants are competing, rather than collaborating. They state their own arguments but seldom listen to each other’s talk. They do not attempt
to seek consensus with respect to the suggestions offered by other members. Discussants engaged in disputational talk usually pose their own assertions or counter-assertions to rebut other’s ideas without listening to each other. Discourse features such as elaboration or clarification seldom occur in the disputational talk.

In cumulative talk, the discussants make longer statements than in disputational talk. However, discussants in cumulative talk seldom challenge each other’s ideas or try to incorporate other’s arguments in their own statements. The “common knowledge” that the cumulative talk produces is the accumulation of the opinion provided by different speakers. The discussants do not attempt to solve any conflicts or misunderstanding that emerge from their exchange of ideas. They also seldom ask each other to clarify their statements. As a result, cumulative talk does not support the discussants questioning or challenging ideas of various points of view, or encourage students to make explicit their thoughts, reasons, or knowledge.

Table 5 shows the range and mean percent of agreement for each discourse coding category. The coders attained 85% agreement or greater on all categories except exploratory talk. The mean inter-rater agreement across all categories was 91.98%. Inter-coder agreement was lower for exploratory talk because, even though the second coder and I often agreed on the occurrence of specific episodes of exploratory talk, we could not always agree on the exact beginning and ending of each sequence. The discrepancy in locating the exact sequences of exploratory talk lowered the percentage of agreement for this category.
Table 5  Range and Mean Percent of Agreement between Coders by Discourse Coding Category

<table>
<thead>
<tr>
<th>Coding Category</th>
<th>Range</th>
<th>Mean</th>
</tr>
</thead>
<tbody>
<tr>
<td>Authentic</td>
<td>93.77-94.82</td>
<td>94.29</td>
</tr>
<tr>
<td>Uptake</td>
<td>98.12 -96.79</td>
<td>97.46</td>
</tr>
<tr>
<td>High-level thinking</td>
<td>82.78-88.43</td>
<td>85.60</td>
</tr>
<tr>
<td>Affective response</td>
<td>100 -100</td>
<td>100</td>
</tr>
<tr>
<td>Inter-textual response</td>
<td>100 -100</td>
<td>100</td>
</tr>
<tr>
<td>Shared-knowledge response</td>
<td>100 -100</td>
<td>100</td>
</tr>
<tr>
<td>Elaborated explanations</td>
<td>84.88-95.45</td>
<td>90.17</td>
</tr>
<tr>
<td>Exploratory talk</td>
<td>67.56-69.08</td>
<td>68.32</td>
</tr>
</tbody>
</table>

The second coding system was from Marshall et al. (1995) to identify if CR prompted students to make inferences from multiple knowledge sources. According to Marshall et al., the basic unit of analysis is a communication unit within a speaker’s turn. The definition of a communication unit is “the force of a sentence, though maybe as short as one word” and “it represents an identifiable remark or utterance on a single subject” (p.11).

In Marshall et al.’s coding scheme, there are five basic categories of discourse functions and each category has several subcategories which allow a closer analysis of the features of the communication unit (see Table 5).
Table 6  Definitions and Examples of Five Major Discourse Functions of Communication Unit

<table>
<thead>
<tr>
<th>Discourse Function</th>
<th>Definition</th>
<th>Examples</th>
</tr>
</thead>
<tbody>
<tr>
<td>Direct</td>
<td>Any remark (even when it is represented as a question) that intends to move others toward an action or to shift their attention or the focus on the discussion</td>
<td>T: OK. Michael’s turn (Transcript-1031-S4)</td>
</tr>
<tr>
<td>Inform</td>
<td>Any statement of fact or opinion whose purpose is to represent what the speaker knows, believes, or thinks about a topic. Reading and quoting from texts are included here.</td>
<td>L: Let's put only the child in the cave then went through, to get, make the baby like hide, and then you put all your fortune on it because you want it to be success for and the baby successful or everyone will die (Transcript-1212-S7).</td>
</tr>
<tr>
<td>Question</td>
<td>Any verbal or nonverbal gesture (as indicated in discussions that were videotaped) that invites or require a response from an listener.</td>
<td>M:[so you ], if you stay with your mom what would you do? ( Transcript-1017-S3)</td>
</tr>
<tr>
<td>Respond</td>
<td>Any verbal or nonverbal gesture that acknowledges, restates, evaluates or otherwise reacts to the nature, quality, or substance of the preceding remark itself. Answers to questions are coded in the “Inform” category. A remark coded as a response to a question would ask for clarification or explanation of the question itself or would comment on the value of the question.</td>
<td>T: Why? Why can't they just move? You know, it's wild west. L: The wild west? ( Transcript-1212-S7)</td>
</tr>
</tbody>
</table>


According to Marshall et al. (1995), there are three sub-categories under the “Inform” category: Classroom logistic, Reads or quotes from text, and Instructional statement. However, only a communication unit corresponding to “Instructional
statements” was further analyzed for its knowledge sources and kind of reasoning. The sub-categories of knowledge sources include: Personal-autobiographical information, Text, Text-in-context, General Knowledge, and Previous class discussions, lectures, or readings. The categories of reasoning for the Instructional statements include: Summary-description (statements which focus on the literal features of an experience or text); Interpretation (statements which make an inference about the meaning or significance of information); Evaluation (statements that focus on the quality of an experience or a text); and Generalization (statements that move toward theoretical speculation about the nature of characters, authors, and text) and Other.

Communication units coded as “Questions” are divided into two sub-categories Classroom Logistic and Instructional focus. Only the “Instructional focus” question unit was coded for its knowledge source and reasoning.

Table 7  Percent of Agreement between Coders by Intellectual Contents Coding Scheme of Marshall et al. (1995)

<table>
<thead>
<tr>
<th></th>
<th>Agreement in non-CR session</th>
<th>Agreement in CR session</th>
</tr>
</thead>
<tbody>
<tr>
<td>Knowledge sources</td>
<td>96.43</td>
<td>98.75</td>
</tr>
<tr>
<td>Kind of Reasoning</td>
<td>89.09</td>
<td>88.89</td>
</tr>
</tbody>
</table>

In Table 7, the inter-rater agreement for the coding scheme in Marshall et al. (1995) was 92.76 % (non-CR sessions) and 94.88% (CR sessions) and the mean was 93.82 %.
3.5.2 Prompted think aloud protocols.

The prompted think-aloud protocols, the second part that students reported what strategies they used to read text aloud (see also 3.4.3), were analyzed to explore the reading strategies employed by the readers during reading. The categories shown in Table 4 were applied to categorize the protocols in terms of reading strategies. The categories in Table 8 show the key reading strategies identified by Carrell (1989), Everson and Ke (1997), Fung, Wilkinson and Moore (2003), and Lee-Thompson (2008).

Table 8  Reading Strategies Used to Code the Think-aloud Protocols

<table>
<thead>
<tr>
<th>Decoding</th>
<th>Literal comprehension</th>
<th>Inferential comprehension</th>
<th>Metacognition</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. Word recognition (a) Scanning for unfamiliar words (b) Consulting textual resources to find out the translation equivalents or Pinyin. (c) Using knowledge of radicals to identify the unknown words</td>
<td>1. Translating</td>
<td>1. Previewing</td>
<td>1. Awareness of reading difficulties</td>
</tr>
<tr>
<td>2. Using lexical knowledge</td>
<td>2. Paraphrasing</td>
<td>2. Using text structure to help identify the main ideas.</td>
<td>2. Awareness of success in understanding the text</td>
</tr>
<tr>
<td>3. Using syntactic or other grammatical knowledge</td>
<td>3. Drawing inferences</td>
<td>3. Awareness of lack of background knowledge.</td>
<td>3. Rereading</td>
</tr>
<tr>
<td></td>
<td>5. Clarifying</td>
<td>6. Using background knowledge and personal experience to solve problems.</td>
<td>5.</td>
</tr>
</tbody>
</table>
3.5.3 Reading accuracy and rate

For accuracy rate, I counted the number of correct words in students’ oral reading and divided the number of correct words by the number of total words in the story. Then I converted those numbers into percentages. The following formula (3.1) was used to calculate the accuracy rate.

\[
\text{Accuracy Rate} = \frac{(\text{Total words read} - \text{Total errors})}{\text{Total words in text}} \times 100\% \quad (3.1)
\]

For reading rate, I calculated the time that a student spent on their oral read aloud tasks (excluding the time spent reporting their reading strategies) and calculated the number of correct words the student read in one minute. The metric for reading rate is words correct per minute (wcpm). The formula (3.2) I used was:

\[
\text{Reading Rate} = \frac{\text{Number of correct words}}{\text{Number of minutes}} \quad (3.2)
\]

3.5.4 Oral retelling

The procedures used by Carlisle (1999) were adopted and modified to examine the quality of students’ retellings. For each story, a hierarchical tree structure comprised of discrete idea units or information was generated and each unit was assigned points based on the level of importance (Carlisle, 1999, Meyer, 1995). Then, these units were reorganized to form a hierarchical tree diagram. The units positioned at the top levels of the structure were assigned more points than the units at the lower level because the top units represented the ideas central to the passage.

Then, the hierarchical tree diagram was used to score the students’ recalls to measure the extent of passage-related information that students recalled. The scorers
examined each statement that student made in their recalls to determine if it correctly
reflected the ideas or the plot of the original story. If the students misrepresented the
passage or only gave incomplete information, they received no credit on that idea
unit. (Appendix 4 shows the hierarchical tree structure).

A second rater coded a sample of the students’ retellings to establish inter-rater
agreement. For every student, one of the retellings that were completed before CR
was introduced and two retellings after CR was introduced were randomly chosen
and coded by the second rater and me. Discrepancies in coding were discussed and
the taxonomy and procedures were modified as necessary.

In developing the procedures for scoring, three kinds of inter-rater agreement
were calculated. Agreement\textsubscript{1} is the reliability of dividing the story into idea units. To
calculate Agreement\textsubscript{1}, the second rater and I read and divided each story into idea
units. An idea unit represented an independent concept or piece information from the
story. For example, in Story 3, the sentence ”她的夢想是去法國的烹飪學校學習，
成為一流的廚師” (Her dream is to study in the cooking school in France and
become the best chef) is composed of three idea units: “her dream is going to the
cooking school” in France” and “become the best chef”. Each idea unit carries one
independent concept. Thus, the idea units can be phrased as “Her dream is going to
the cooking school”, “The cooking school is in France”, and “She wants to be the
best chef.” We first determined the number of idea units expressed in each story
separately then calculated the percentage of agreement between raters on the
numbers of idea units. The formula for calculating Agreement\textsubscript{1} is as follows.
Discrepancies were resolved in discussion. Thirteen stories were scored. Agreement\textsubscript{1} ranged from 64\% to 100\% and the mean was 88\%.

\[
\text{Agreement}_{1} = \frac{\text{Number of idea units in agreement}}{\text{Total Number of idea units}} \times 100\% \quad (3.3)
\]

Second, we assigned points to each unit by using a scale ranging from 1 to 6 which denoted the level of importance of each idea unit. The scorers scored each idea unit separately and calculated the differences in assigning points to sum the discrepancies in the importance of each idea. By dividing the total scores and then subtracting from 1, the Agreement\textsubscript{2} measure was achieved. The formula for Agreement\textsubscript{2} is as follows (3.4). Agreement\textsubscript{2} ranged from 86.11\% to 97.9\% and the mean was 91\%.

\[
\text{Agreement}_{2} = 1 - \frac{\text{Sum of the differences in each unit}}{\frac{\text{Scorers’ total scores}}{\text{Number of scorers}}} \times 100\% \quad (3.4)
\]

After discussing the differences in points for each unit, we developed the hierarchical tree structure for each story, and then used these tree structures as templates for scoring the free recalls. Before scoring, five protocols were randomly chosen to establish Agreement\textsubscript{3}. A student earned credit if his or her response met one of the following criteria: (1) he or she used the accurate translation of the Chinese words in the text or roughly synonymous words, (2) he or she used a more general word, or (3) he or she used a slightly less general word that reproduced the
ideas (cf. Anderson, 1981). If the students misrepresented a passage or gave incomplete passage information, they received no credit. Finally, we summed the number of points that student earned in the recall protocols and calculated the percentage. After calculating the agreement, differences in scoring were resolved through discussion. The formula for Agreement\textsubscript{3} (3.5) is as follows. Agreement\textsubscript{3} ranged from 86.11% to 100% and the mean was 93.59%.

\[
\text{Agreement}_3 = \frac{\text{Number of idea units in agreement}}{\text{Number of idea units in story}} \times 100\% \quad (3.5)
\]

After establishing inter-rater agreement, I scored each transcript. To present the results of students’ recalls, I not only calculated the sum of points that students earned for each idea unit, I also calculated the numbers of idea units that students recalled. Then I calculated the percentage of the points that students earned and the percentage of the number of correct idea units in each retelling.

### 3.5.5 Oral argument task

The scoring procedure developed by Reznitskaya et al. (2001), which was originally designed for scoring students’ persuasive essays, was used to analyze students’ oral arguments. The scoring procedure was designed to assess a student’s reasoning ability in making arguments, counter arguments, and rebuttals and the extent to which the student used information from textual information as evidence to support his or her arguments. However, because the purpose of this study was to explore students’ abilities to make various types of arguments, the coding procedure
in Reznitskaya et al. (2001) was modified slightly for the purposes of this study.

To score the oral arguments, the transcripts of students’ oral protocols were coded in five steps. First, the transcripts were divided into idea units that represented parts of a claim. According to Reznitskaya et al. (2001), an idea unit is defined as “a sentence or a clause that contains a verb or a participle and expresses one action.” Second, each unit was classified into the category of Coded and Not Coded. A Coded unit was one that was clear and relevant to the central question; a Not Coded unit was one that was unclear, irrelevant, or supplementary. Third, only Coded units were further classified into the subcategories of argumentation, including the categories of: Position, Argument, Counterargument, Rebuttal, and Repeat. Then, the numbers of Coded idea units in each category were calculated. I divided the number of idea units in each category by the total number of Coded units in students’ retelling to calculate the percentage in each category.

3.6 Trustworthiness and Validity

To ensure the quality of the present study, issues such as trustworthiness, construct validity, and catalytic validity were considered. The term “trustworthiness” was explained by Guba (1982, cited in Krathwohl, 1998), who stated that the researchers should ensure “credibility,” “dependability,” and ‘confirmability’ in their research (Lincoln & Guba, 1985). Guba’s criterion required the researcher to “exercise and exhibit methodological concerns and cautions” throughout the process of data gathering and analysis (Krathwohl, 1998, p.337). To fulfill this goal, I provided detailed description of the site, participants, the process of data collection and analysis, social connections between the researchers and the participants, and
practices used in presenting data in the report. I was also involved in “prolonged engagement” in the research site as my involvement with the Chinese community school lasted approximately one and half academic years.

To help establish trustworthy findings, multiple data sources, multiple methods of data collections, and multiple theoretical frameworks were adopted to triangulate my findings (cf. Lather, 1986). I also established a deep connection with members of the class. Two months before I gathered my data, I started visiting the class in January, 2010. I sat with the students, joined in their discussions, observed their interactions with their teacher, and read their writing assignments. I also kept in touch with Ms. Hen, who shared her curriculum plans and student assignments with me. I even had the opportunity to help Ms. Hen develop her teaching materials. During the process of collecting data, I revisited theories of reading comprehension and methods of discourse analysis to identify the best interpretations of my findings. I also maintained a dialogue with Ms. Hen when I began the data analysis.

The “construct validity” criterion is rooted in theory construction (Lather, 1986). It requires reciprocal “systemized reflectivity,” which gives an indication of how a prior theory has been changed by the data. The consideration of construct validity drove me to consistently compare what I found in my research site with the theoretical frameworks of CR and related empirical studies. I consider that the purpose of my work was not only to examine how CR changed the nature of the classroom discourse, but also to test its effect in the context of a Chinese heritage students’ classroom. To achieve construct validity, I went back to the studies of CR and the learning theories during my observations to reflect on the power of the
theories in explaining what I found in the field.

According to Lather (1986), “catalytic validity” refers to “the degree to which the research process re-orient, focuses, and energizes participants in what Freire termed “conscientization”” (Lather, 1986, p.67). This form of validity prompts the researcher to reflect on how their study as well as their presence transform the original context of the research site and thus make a difference to the social reality. As a result, the researcher should clearly explain their role in their report and consistently reflect on their own influence on the context during the research process. Lather argued that the reflection on catalytic validity enables the researchers to “gain self-understanding and ideally, self-determination through research participation” (p.67).

Since my research required me to cooperate with Ms. Hen and implement a new instructional approach in her class, I paid considerable attention to catalytic validity. I recorded my self-reflections about my influence in the class and reported these reflections in the dissertation. I also ensured that I presented multiple voices in my report.

3.7 Researcher’s Role

The first thing that I address is the “insiderness” and “outsiderness” (Groves, 2003) that I took in engaging with the participants. When I chose Ms. Hen and her students to be my participants, I myself was also teaching in the same school as a teacher of Pinyin K (kindergarten) class. As a result, most of the time, I was considered an “insider” rather than an “outsider” by Ms. Hen and her students. Ms. Hen shared with me the information about classroom management, school
administration, and our experiences in dealing with parents. Ms. Hen also loved to share her instructional ideas with me and sometimes offered me advice about how to teach the younger children. When I first came to her class, Ms. Hen introduced me as the teacher of the kindergarten class and wanted me to join her class discussion if possible.

In my observations, I took the stance of a participant observer in my fieldwork because I believed this was the most effective way to meet the requirement of ecological validity. I worked with Ms. Hen as a teaching assistant to develop the teaching materials and methods of discussion and I joined instructional events (not the discussions) if I was invited. My presence in the classroom did influence the cultural context of the classroom. For example, the students considered me as the second teacher in the class and they treated me just as they treated Ms. Hen. I also found that when I officially started my research in her class in September, 2010, Ms. Hen began to use more student-centered instructional strategies which I had never seen in my unofficial visits to her class. These student-centered strategies were incorporated into her teaching of grammar, key words and cultural background for each story prior to discussion.

In some way, I was considered as having a degree of “insiderness” when I entered this field. I was identified as a teacher who was interested in the class, rather than as an observer who was doing research on Ms. Hen and her students. The students in some ways considered me a teacher and were very curious about how I taught my own students in my class. They also considered me Ms. Hen’s assistant and as someone who probably had some power to evaluate their performance. They
were nervous when they did oral tasks with me. When I joined their classroom activities, they expected me to help them answer questions about vocabulary or Chinese culture. In other words, I was viewed as a “second teacher” in the class to some extent.

I considered that the “insiderness” that I had – as a teacher in the Chinese community school – did make Ms. Hen and her students easily accept my presence in their class. Nevertheless, I was not satisfied with the role of “second teacher” that they assigned to me. I endeavored to make Ms. Hen and her students regarded me as a “researcher” who was concerned about everything that happened in the classroom but who was not going to make a judgment about their performance. During my study, I explained the purpose of my observations to them. I told the students that my observations would not affect how the teacher graded their performance and that I would not report my findings to their parents. I also avoided evaluating their performance or correcting their off-task behaviors even when Ms. Hen expected me to do so. Whenever possible, I avoided interfering in their dialogue in the class.

The second thing that I need to address is the way I opened a dialogue with Ms. Hen when I decided to demonstrate a new instructional approach in her class. Because my study went beyond simply understanding what happened in the classroom, I was concerned about how Ms. Hen viewed CR. Ms. Hen was expecting the intervention to reduce students’ off-task behaviors. She also wanted to increase the amount of discussion in her class. As a result, she was expecting that the implementation of CR would make her students more engaged in academic discourse. However, she still had doubts about how far we could go to change the nature of the
class. We spent a lot of time constructing our definitions of a “good” and “juicy” discussion and how it impacted her original pedagogical philosophy. Ms. Hen was passionate to share what she knew about Chinese culture with her students and she considered that the open discussion format was a good opportunity to do this. As a result, she felt very uncomfortable not talking too much in the CR discussions. I spent a lot of time sharing with her what I knew about CR and why the reduction in teachers’ role was beneficial to the students. We also talked about the possible effects that CR might have in the class. When we talked about that, Ms. Hen also expressed some concern that she might not lead a “perfect” CR discussion in the very beginning and she worried that she would “let me down”. Understanding her anxiety, I tried to support Ms. Hen by constantly sharing my knowledge about CR and working with her to solve any problems in implementing CR. I told Ms. Hen that everyone has their own way to conduct discussion and I believed that she could find her way. I tried to “stand in her shoes” to think about solutions for the problems that she encountered in the discussions. Based on our own discussion, we revised the template of teacher moves several times and added notes and examples to make the description of teacher moves more understandable and helpful for her. Ms. Hen gradually got used to “letting the students go,” which allowed the students more chance to participate in the discussion.

The cooperative relationship between Ms. Hen and me made me reflect on how a new strategy impacted the cultural context of a classroom and the underlying principles that the teacher followed to teach her class. My experience told me that when introducing something new to a classroom, what is needed is ongoing
negotiation with the practitioner to make the strategy more culturally sensitive to the local circumstances.
Chapter 4

Findings

This chapter is organized around the four research questions: (1) Do the patterns of classroom discourse in the Chinese heritage language classroom change after the introduction of CR? (2) Does the teacher’s participation in discussions change after the introduction of CR? (3) Do the students’ reading behaviors and reading strategies change after the introduction of CR? (4) Do the students’ skills in argumentation change after the introduction of CR? Results from analysis of the transcribed classroom discussions in the 13 sessions and of students’ performance in the oral tasks are presented to answer these questions.

4.1 Do the patterns of classroom discourse change after the introduction of CR?

4.1.1 Participation structure

In non-CR sessions, Ms. Hen nominated students to answer her questions. However, in the CR-sessions, Ms. Hen gave up her usual turn-taking rules and tried to let the students take turns freely. Figure 4.1 shows the percentages of turns taken by the teacher and the students before and after the introduction of CR. In the non-CR sessions, the percentage of turns taken by Ms. Hen was always higher than the mean percentage of turns taken by the students. This pattern continued for the first two sessions after the introduction of CR, which showed that it took time for
open participation structure recommended in CR to occur. However, after the
discussion of Story 7, the mean percentage of turns taken by the students was greater
than the percentage of turns taken by Ms. Hen (with the exception of session 11).

Figure 4.1  The mean percentage students’ turns and the percentage of teacher’s
turns before and after the introduction of CR

Figure 4.2 shows the percentages of communication units in teacher and
students’ talk before and after the introduction of CR. In the non-CR sessions, the
percentage of teachers’ communication units is not much fewer that the percentage of
students’ communication units. However, after CR was adopted, the percentage of
students’ communication units far exceeded the percentage of the teacher’s
communication units.
Table 9 shows the numbers of words, turns and words per turn contributed by the students and Ms. Hen. These results reveal that the students’ contribution increased after CR was introduced. In CR sessions, the numbers of students’ words and turns exceeded the numbers of Ms. Hen’s words and turns in each discussion. The length of students’ turns also increased after CR was introduced ($M_{\text{non-CR}}=12.49$, $SD_{\text{non-CR}}=3.27$; $M_{\text{CR}}=16.6$, $SD_{\text{CR}}=8.65$). And the length of the teacher’s turns decreased ($M_{\text{non-CR}}=30.79$, $SD_{\text{non-CR}}=15.33$; $M_{\text{CR}}=20.98$, $SD_{\text{CR}}=8.76$).

*Figure 4.2* Percentage of communication units in teacher and students’ talk before and after the introduction of CR.
Table 9  Number of Words, Turns, and Words per Turn Contributed by Teachers and Students by Discussions

<table>
<thead>
<tr>
<th>Discussions</th>
<th>Non-CR sessions</th>
<th>CR sessions</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>1</td>
<td>2</td>
</tr>
<tr>
<td>Number of Words</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Students</td>
<td>1787</td>
<td>651</td>
</tr>
<tr>
<td>Teacher</td>
<td>1493</td>
<td>793</td>
</tr>
<tr>
<td>Total</td>
<td>3280</td>
<td>1444</td>
</tr>
<tr>
<td>Number of Turns</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Students</td>
<td>158</td>
<td>72</td>
</tr>
<tr>
<td>Teacher</td>
<td>67</td>
<td>38</td>
</tr>
<tr>
<td>Total</td>
<td>225</td>
<td>110</td>
</tr>
<tr>
<td>Number of Words per Turn</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Teacher</td>
<td>22.28</td>
<td>20.87</td>
</tr>
<tr>
<td>Total</td>
<td>14.50</td>
<td>13.12</td>
</tr>
</tbody>
</table>

Figure 4.3 represents the degree to which speakers controlled the floor. In CR sessions, the students appeared to take more control of the floor than they did in non-CR sessions.

Figure 4.4 indicates how students are trained to elaborate their ideas with respect to the higher communication units in each turn. In non-CR sessions, when Ms. Hen took the floor, she always talked more than her students. However, this situation altered in CR sessions. After Story 6, the numbers of students’ communication units within turns increased. For some stories, the number of students’ communication units within turns exceeded the numbers in the teacher’s turns.
**Figure 4.3**  Frequency of students’ and teacher’s turns per 100 turns before and after the introduction of CR

**Figure 4.4**  Mean number of communication units within turns by teacher and students before and after the introduction of CR
It should be noted that the discussion in Story 10 was different from the other CR sessions. The discussion of Story 10 was filled with students’ short but quick exchanges of ideas when they were engaged in an active problem-solving process. To help the students organize what they had said during the discussion and directed them to think in different ways, Ms. Hen spent time on rephrasing and summarizing the previous utterances. As a result, in this discussion, the numbers of Ms. Hen’s communication units within turns exceeded the communication units within students’ turns.

In CR sessions, the students were the main contributors to the discussions. They took more turns than Ms. Hen and they tended to make longer statement than before. However, it should be noted that the change did not occur immediately after the CR sessions began. In the first two CR sessions, both the teacher and the students were novice to the transaction of discussion strategies. While students forgot or failed to move to the next discussion step, they still expected Ms. Hen’s assistance to control the discussion.

4.1.2 Analysis of discourse in terms of high-level thinking

In this section, the discourse features that index high-level thinking skills in the 13 discussions are examined by means of the coding scheme of Soter et al. (2008).

Table 10 shows that the students and the teacher shared almost equal opportunities to pose questions in non-CR and CR sessions but the percentages of students’ question increased slightly in CR sessions ($M_{\text{non-CR}}=44.45\%$, $SD_{\text{non-CR}}=12.0$; $M_{\text{CR}}=52.51\%$, $SD_{\text{CR}}=16.95$).
Table 10  Percentages of Questions from Teachers and Students before and after the introduction of CR

<table>
<thead>
<tr>
<th>Discussion</th>
<th>Non-CR sessions</th>
<th>CR sessions</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>1</td>
<td>2</td>
</tr>
<tr>
<td>Teacher Questions</td>
<td>53.19</td>
<td>51.85</td>
</tr>
<tr>
<td>Student Questions</td>
<td>46.81</td>
<td>48.15</td>
</tr>
</tbody>
</table>

Table 11 shows the percentages of authentic, test and other questions asked by Ms. Hen and the students. In addition to the Other category in teacher’s and students’ questions, the Authentic and Test questions comprised around half of the total question in non-CR (49.4% for teacher and 57.8% for students), but comprised around seven tenths in CR-sessions (72.7% for teacher and 72.6% for students). The results reveal that CR intervention facilitated authentic questions. For example, in the discussion of Story 13, one of the main topics in this discussion was to share everybody’s experience of adopting pets. Therefore, the students asked a lot of “test” questions about the other students’ “pet stories”. Thus, the percentage of “test questions” in the discussion of Story 13 was relatively high.
Table 11  Percentages of Teacher and Student Questions coded as Authentic, Test, or Other before and after the introduction of CR

<table>
<thead>
<tr>
<th>Discussion</th>
<th>Non-CR sessions</th>
<th>CR sessions</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>1</td>
<td>2</td>
</tr>
<tr>
<td>Teacher Questions</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Authentic</td>
<td>24.00</td>
<td>28.57</td>
</tr>
<tr>
<td>Test</td>
<td>20.00</td>
<td>28.57</td>
</tr>
<tr>
<td>Other</td>
<td>56.00</td>
<td>42.85</td>
</tr>
</tbody>
</table>

| Student Questions |
| Authentic   | 9.09  | 46.15 | 50.00 | 33.33 | 16.67 | 66.67 | 57.69 | 87.50 | 58.82 | 85.71 | 75.00 | 90.00 | 33.33 |
| Test        | 27.27 | 23.08 | 50.00 | 0.00  | 33.33 | 0.00  | 7.69  | 0.00  | 29.41 | 0.00  | 0.00  | 23.80 |
| Other       | 63.64 | 30.77 | 0.00  | 66.67 | 50.00 | 33.33 | 34.61 | 12.50 | 11.76 | 14.29 | 25.00 | 10.00 | 42.85 |

Table 12 shows the percentage of authentic and test questions that showed uptake and the percentage of such questions that elicited high-level thinking, affective, inter-textual or shared knowledge responses. First, students demonstrated a high incidence of uptake in the non-CR sessions ($M_{\text{non-CR}} = 81.25\%$, $SD_{\text{CR}} = 37.5\%$). Indeed, in sessions 3 through 5, all student questions showed uptake. Nevertheless, with the introduction of CR discussions, the incidence of student uptake increased ($M_{\text{CR}} = 99.04\%$, $SD_{\text{non-CR}} = 2.53$). Second, the incidence of students asking questions that elicited high-level thinking also increased ($M_{\text{non-CR}} = 52.08\%$, $SD_{\text{non-CR}} = 33.59$; $M_{\text{CR}} = 91.53\%$, $SD_{\text{CR}} = 16.05$). Third, the students asked more affective response questions in the CR sessions than in the non-CR sessions ($M_{\text{non-CR}} = 12.22\%$, $SD_{\text{non-CR}} = 32.96$; $M_{\text{CR}} = 42.68\%$, $SD_{\text{CR}} = 32.96$). Fourth, there was little difference in the
incidence of inter-textual reference questions ($M_{\text{non-CR}}=0\%$, $SD_{\text{non-CR}}=0$; $M_{\text{CR}}=6.56\%$, $SD_{\text{CR}}=14.91$) or shared knowledge questions before and after the introduction of CR ($M_{\text{non-CR}}=2.5\%$, $SD_{\text{non-CR}}=5.59$; $M_{\text{CR}}=3.12\%$, $SD_{\text{CR}}=8.84$).

These results suggest that, the introduction of CR positively influenced the students’ use of authentic and test questions.

Table 12  Percentages of Authentic and Test Questions that showed Uptake or Elicited, High Level Thinking, Affective Response, Inter-textual Reference and Shared Knowledge from Students and the Teacher Before and After the Introduction of CR

<table>
<thead>
<tr>
<th></th>
<th>Non-CR sessions</th>
<th>CR sessions</th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
<td>5</td>
<td>6</td>
<td>7</td>
<td>8</td>
<td>9</td>
<td>10</td>
<td>11</td>
</tr>
<tr>
<td>Teacher Questions</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
| Uptake               | 54.5 | 25.0 | 0.0 | 40.0| 50.0 | 71.4 | 100.0| 75.0| 40.0| 83.3| 100.0| 55.6| 66.7 | 85.7| 83.3| 100.0| 80.0| 100.0| 100.0| 100.0| 100.0| 55.6| 66.7
| High Level Thinking  | 54.5 | 62.5| 100.0| 20.0| 0.0 | 85.7| 83.3| 100.0| 80.0| 100.0| 100.0| 100.0| 100.0|
| Affective Response   | 0.0  | 25.0 | 0.0 | 0.0 | 0.0 | 0.0 | 41.7| 50.0| 0.0 | 16.7 | 25.0 | 44.4| 33.3 |
| Inter-textual        | 0.0  | 12.5| 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| Reference            | 0.0  | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| Shared Knowledge     | 0.0  | 12.5| 0.0 | 0.0 | 0.0 | 0.0 | 5.9 | 0.0 | 40.0| 16.7| 0.0 | 0.0 | 0.0 |
| Student Questions    |     |     |     |     |     |     |     |     |     |     |     |     |     |
| Uptake               | 25.0| 88.9| 100.0| 100.0| 100.0| 100.0| 100.0| 100.0| 100.0| 100.0| 100.0| 93.3| 100.0| 100.0| 100.0| 100.0| 100.0| 91.7|
| High Level Thinking  | 25.0| 66.7| 50.0| 100.0| 33.3| 10.0| 82.4| 100.0| 46.7| 100.0| 100.0| 100.0| 100.0| 58.3|
| Affective Response   | 0.0 | 11.1| 50.0| 0.0 | 0.0 | 0.0 | 17.7| 85.7| 46.7| 66.7 | 33.3 | 44.4| 75.0 |
| Inter-textual        | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 40.0| 16.7 | 0.0 | 0.0 | 0.0 |
| Reference            | 0.0 | 12.5| 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 25.0| 0.0 | 0.0 | 0.0 | 0.0 |
| Shared Knowledge     | 0.0 | 12.5| 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |

As shown in Table 12, Ms. Hen’s use of uptake increased substantially after the introduction of CR ($M_{\text{non-CR}}=33.90\%$, $SD_{\text{CR}}=22.1$; $M_{\text{CR}}=75.04\%$, $SD_{\text{non-CR}}=22.1$).

The incidence of her asking questions that elicited high-level thinking also increased ($M_{\text{non-CR}}=47.40\%$, $SD_{\text{non-CR}}=38.87$; $M_{\text{CR}}=92.71\%$, $SD_{\text{CR}}=9.24$). Ms. Hen also asked more affective response questions in the CR sessions as compared to the non-CR sessions ($M_{\text{non-CR}}=5.00\%$, $SD_{\text{non-CR}}=11.18$; $M_{\text{CR}}=25.45\%$, $SD_{\text{CR}}=21.54$). The incidence of Ms. Hen asking inter-textual reference and shared knowledge questions
questions was low or zero across all sessions.

Table 13 shows the percentage of turns in exploratory talk before and after the introduction of CR. The results show that after the CR was introduced, the incidence of exploratory talk increased substantially ($M_{\text{non-CR}}=6.61\%$, $SD_{\text{non-CR}}=3.375$; $M_{\text{CR}}=24.60\%$, $SD_{\text{CR}}=9.56$).

<table>
<thead>
<tr>
<th>Non-CR sessions</th>
<th>CR sessions</th>
</tr>
</thead>
<tbody>
<tr>
<td>1 2 3 4 5</td>
<td>6 7 8 9 10 11 12 13</td>
</tr>
<tr>
<td>Percentage of Exploratory Talk</td>
<td></td>
</tr>
<tr>
<td>6.22 4.55 12.50 4.34 5.45</td>
<td>10.65 23.20 28.57 13.45 30.77 23.33 26.02 40.77</td>
</tr>
</tbody>
</table>

Following is an excerpt that illustrates that students shared the floor with each other to talk about the possible solutions for the dilemma questions in CR discussions. This is an example of exploratory talk. This excerpt is from the discussion of Story12. The topic of Story12 is about friendship. The main character Xiao Mei received a birthday present from her best friend, a box of home-made cookies. After Xiao Mei tasted the cookies, her best friend asked her if she liked it. Xiao Mei didn’t want to lie to her friend so she said “Well, it’s not really good.” And her comments annoyed her best friend. After reading this story, Ms. Hen asked the students: If you are Xiao Mei, would you tell their best friend the truth even if you know the truth hurts? In this discussion, the students were respectful of each others’
opinions, reasons, and engaged in the process of knowledge co-construction.

In the excerpt, I extracted the sequence initiated by Michael’s statement about his choice and how he would respond to his best friend. Echoing Michael’s response, other students also proposed their solution to this question.

1 Michael: Two things. First of all I would be like, well, cookies are OK but I like THIS even better. So you know she won't make the cookies. So you know how
2 some people think. they always make=
3 Olivia: =Umm. Like hot XX.
4 Michael: You know like some persons always make cookies and someone always make brownie so make it so like, cookies are my best thing. She probably will get
5 them all.
6 Larry: I like =
7 Michael: =The other thing would say, like if you won't and she's still baking cookies
8 would be like "We should bake them together" so you won't =
9 Emily: =Cause this is more FRIENDSHIP.
10 Ms. Hen: OK.
11 Emily: But like someone like made this cookies like use all his or her love and put them in the cookies and then you get it to someone and they say, Oh, the cookies
12 are OK. But you like something better like first they make you cookies like that.
13 So kinda of saying you kinda of like them but you like something else better would
14 kinda of be=
15 Olivia: =Like oh, you don't know me in. It's =
16 Emily: =Yeah, I don't know.
17 Olivia: It’s sudden let it down.
18 Emily: O:r (cough) could be like "thanks for your cookies that was great. Thanks a lot"
19 Olivia: Well you can say just "This is the nicest thing you've done for me"
20 Victoria: "This is the nicest thing you've done for me", but they work XX for me? I don't know. Well, we can work on it together or makes that awkward. It's kinda
In this exchange, Michael proposed his solution to the question. He said that he will tell his friend “I would be like, well, cookies are OK but I like THIS even better” in line 1 and 2. Then Michael provided his reason for saying that. His position was then affirmed by Olivia who provided supplementary evidence in line 4. Then Michael continued to elaborate his opinion. Larry tried to interrupt his talk but he failed. Michael’s continued completing his argument and was affirmed again by Emily who provided another reason: “Cause this is more FRIENDSHIP.” in line 11. Then Emily elaborated and challenged Michael’s statements by saying “ kinda of saying you like something better like first they make you cookies like that.” in line 16 and 17. Her argument then was elaborated by Olivia in line 18 and Olivia’s elaboration was affirmed by Emily in line 19. Then Emily provided another alternative option to this question by saying “Thanks for your cookie, thanks a lot” in line 20 and 21. Michael’s opinion later was supported by Olivia and Victoria. However, Victoria indicated that what Emily said might not really work. Responding to Victoria’s question, Emily proposed another option and then Larry joined in the discussion by saying “Make it awkward”. Victoria made a different suggestions to answer the question in line 25 and 26 and explained “It's kinda hard. I mean, if you, if you was her best friend, she would understand.”

In this sequence, the other students helped Michael elaborate his thoughts and provided reasons to polish his claims. They carefully examined Michael’s decision and raised questions about his statement, and proposed their own solutions. They not
only tried to find a better one to the question but also indicated their reasons. They listened carefully to each other’s statements and pooled their thoughts to make a more considered decision.

Table 14  Percentage of Students’ Turns coded as Elaborated Explanations Before and After the Introduction of CR

<table>
<thead>
<tr>
<th></th>
<th>Non-CR sessions</th>
<th>CR sessions</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>1   2  3  4  5</td>
<td>6  7  8  9  10  11  12  13</td>
</tr>
<tr>
<td>Elaborated</td>
<td>15.87 0.00 14.29 4.08 7.14</td>
<td>5.10 17.19 22.06 24.26 20.18 42.55 17.54 26.32</td>
</tr>
<tr>
<td>Explanations</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Table 14 shows the percentage of the students’ turns coded as elaborated explanation before and after the introduction of CR. The results indicate that the students’ elaborated explanation increased substantially after CR was introduced ($M_{\text{non-CR}}=8.28\%, \ SD_{\text{non-CR}}=6.73$; $M_{\text{CR}}=21.9\%, \ SD_{\text{CR}}=9.54$).

In sum, findings indicated that the students performed more discourse features indexed high-level thinking skills. They asked more authentic questions, uptake questions, high-level thinking questions, affective questions, and made longer elaborated explanation. They also produced more exploratory talk after CR was introduced. This result supports that CR improves the quality of discussions.

4.1.3  Analysis of discourse in terms of knowledge sources and kinds of reasoning

In this section, I present results of analysis of the discussions in non-CR and CR sessions using the coding scheme of Marshall et al. (1995). The purpose of this
scheme is to examine the sources of knowledge and kinds of reasoning evidenced in the teacher and the students’ discourse. The basic unit of analysis in the results reported is the communication unit, defined as “the force of a sentence, though maybe as short as one word” and “it represents an identifiable remark or utterance on a single subject” (Marshall et al., 1995, p.11) (see also Chapter 3.5.1).

Table 15 presents the overall distributions of the communication units in 13 classroom discussions in terms of five major discourse functions: Direct, Inform, Question, Response, and Other. In both non-CR and CR discussions, the most used discourse functions were Inform (50.55% in non-CR and 65.44% in CR) and Response (31.02% in non-CR and 20.68% in CR). After the introductions of CR, the percentage of communication units in the Inform category increased 14.89% whereas the percentage in the Response category decreased 10.34%. The percentage of communication units in the Direct category slightly decreased (4.09%) and those in
the Other category remained almost unchanged. These results suggest that during the CR sessions the discussants made more statements or arguments, rather than asking other students to clarify ideas or responding to others’ statements. Based on my classroom observations, a possible explanation for the slight decrease in the Direct function in the CR sessions was that students learned to remain quiet and show respect to those who were talking. By contrast, students tended to interrupt each other before CR was introduced. Moreover, the speaker needed to have other students focused on him or her for they did not pay attention to the speaker. After CR was introduced, discussion proceeded more smoothly therefore the Direct function decreased.

Table 15 also shows the frequency of different discourse function by teacher and students. In the non-CR sessions, more than half (54.99%) of Ms. Hen communication units were to Inform students. After CR was introduced, only 44.63% of her communications units were to Inform students. However, after CR was introduced, there was an increase of 9.38% in Ms. Hen’s communication units in the Question category. These results suggest that Ms. Hen spent a lot of her time teaching facts about the texts and sharing her opinions with students in the non-CR sessions. After CR was introduced, Ms. Hen spent more time posing questions. Presumably Ms. Hen realized that asking questions was a useful way to foster students’ engagement and to elicit more elaborated responses from students. The students’ discourse also showed some differences between non-CR and CR sessions. The percentage of their communication units in the Inform category increased 24.48% and the percentage in the Response category decreased 15.76%. The
percentages of their communication units in the Direct and Question categories also slightly decreased. These results suggest that, after CR was introduced, students spent more time making statements rather than posing questions or responding to others’ comments.

To examine the intellectual content of Ms. Hen and her students’ contributions to the discussions, I next examine the knowledge sources and kinds of reasoning evidenced in the teacher and students’ communication units coded in the Inform, Question and Response categories.

Figure 4.5 Knowledge Sources used by Students as a Percentage of Their Communication Units in the Inform Category

Figure 4.5 shows the knowledge sources used by students as a percentage of their communication units in the Inform category. The major knowledge sources used by students in the non-CR sessions were text (23.20%) and text-in-context
After CR was introduced, they relied less on the text (13.77%) as a knowledge source when making statements, and they drew more from personal-autographical knowledge (12.35%), general knowledge (20.33%), and previous class discussions/lectures/readings (10.78%), These results suggest that students increased their use of multiple knowledge sources when make statements after CR was introduced. The use of multiple knowledge sources in quite apparent in the discussion of Story 13. When making statements in this discussion, students relied on general knowledge (16.92% of communication units), the text (13.33%), previous class discussions/lectures/readings (11.28%), and personal-autographical knowledge (3.59%).

Figure 4.6  Knowledge Sources used by the Teacher as a Percentage of her Communication Units in the Inform Category
Figure 4.6 shows the knowledge sources used by the teacher as a percentage of her communication units in the Inform category. The major knowledge sources used by Ms. Hen in the non-CR sessions were text (17.42%) and personal-autographical knowledge (16.13%). After CR was introduced, she relied less on the text (5.62%) and personal-autographical knowledge (1.63%) and more on previous discussions/lectures/readings (23.65%) in CR discussions. These results suggest that rather than regarding herself as the authority in discussions in the non-CR sessions, Ms. Hen was willing to incorporate students’ previous comments about the stories into her remarks in the CR discussions.

Figure 4.7  Kinds of Reasoning Displayed by Students as Percentages of Their Communication Units in the Inform Category

Figures 4.7 shows the kinds of reasoning displayed by students as a percentage of their communication units in the Inform category. Students frequently engaged in
summary-description in both non-CR (13.76%) and CR (10.45%) sessions. Students also tended to engage in evaluation in both non-CR (17.59%) and CR (24.56%) sessions. After CR was introduced, the use of evaluation (24.56%) and interpretation (28.03%) increased. The figure also shows that students seldom used generalization (0.33%) when reasoning before CR was introduced. However, after CR was introduced, students’ use of generalization (2.85%) increased.

![Figure 4.8](image-url)  

Figure 4.8  Kinds of Reasoning Displayed by the Teacher as a Percentage of Her Communication Units in the Inform Category

Figures 4.8 shows the kinds of reasoning displayed by the teacher as a percentage of her communication units in the Inform category. The data show that Ms. Hen frequently engaged in summary-description (27.86%) before CR was introduced, but her use of summary-description reduced considerably (5.35%) after
CR was introduced. Also, her use of interpretation decreased from 12.29% before CR was introduced 9.13% after the introduction of CR. At the same time, her use of generalization increased from 0.73% before CR was introduced to 13.7% after the introduction of CR, and her use of evaluation increased from 8.73% before CR was introduced to 11.36% after the introduction of CR.

*Figure 4.9*   Kinds of Knowledge Sources for Questions Displayed by Students as Percentages of Their Communication Units

Figure 4.9 shows the kinds of knowledge sources for questions displayed by students as percentages of their communication units. In non-CR sessions, students tended to ask text-in-context (2.13%) questions and direct questions from text (4.23%). After CR was introduced, the use of questioning from the text decreased
from 4.23% before the introduction of CR to 0.52% after CR was introduced, and the use of personal-autographical knowledge decreased from 1.82% before the introduction of CR to 0.80% after CR was introduced. However, the use of questioning the text-in-context increased from 2.13% before the introduction of CR to 2.35% after CR was introduced. Moreover, the use of previous class discussions/lecture/readings increased from 1.59% before CR was introduced to 2.54% after the introduction of CR. The result indicates that students learned to ask broader aspects of the questions after CR was introduced.

Figure 4.10  Kinds of Knowledge Sources for Questions Displayed by the Teacher as a Percentage of Her Communication Units

Figure 4.10 shows the kinds of knowledge sources for questions displayed by the teacher as a percentage of her communication units. The major knowledge
sources for questions that Ms. Hen used was the text in both non-CR (5.40%) and CR (6.46%) sessions. Before CR, she mostly asked text (5.40%) and previous class discussions/lectures/readings (2.09%) questions. After CR, she asked more questions from other sources. Her use of previous class discussions/lectures/readings questions increased from 2.09% before the introduction of CR to 7.46% after CR was introduced, the questions of text-in-context increased from 0.24% before the introduction of CR to 1.94% after CR was introduced, the questions of text increased from 5.40% before the introduction of CR to 6.46% after CR was introduced the questions of general knowledge increased from zero before the introduction of CR to 0.95% after CR was introduced, and personal-autographical knowledge increased from zero before the introduction of CR to 0.25% after CR was introduced. The results suggest that the questions Ms. Hen asked increased in all aspects of knowledge sources. Meanwhile, she started to ask students elaborating their statements in the CR sessions, rather than only questioning textual information during non-CR.
Figure 4.11 shows the Kinds of Reasoning for Questions Displayed by Students as Percentages of Their Communication Units. The students mostly used the interpretation questions during both non-CR (4.36%) and CR (3.08%) sessions. The use of the evaluation questions were doubled from 0.87% before the introduction of CR to 1.88% after CR was introduced. In addition, the summary-description questions increased slightly from 1.77% before the introduction of CR to 2.50% after CR was introduced. However, the use of interpretation question decreased from 4.63% before the introduction of CR to 3.08% after CR was introduced. The classroom observations also reveal that, before CR, the raise of interpretation or evaluation questions was highly relied on whether Ms. Hen posed such questions to
class. Therefore, the students’ reasoning for questions in each session depended on if Ms. Hen encouraged them to ask. After CR, these two reasoning questions started to appear in almost all CR discussions. However, it is impossible to contribute the change to CR because the data was insufficient to make this assertion.

Figure 4.12 shows the kinds of reasoning for questions displayed by the teacher as a percentage of her communication units.

Figure 4.12 shows the kinds of reasoning for questions displayed by the teacher as a percentage of her communication units. In non-CR sessions, she used one third of her reasoning questions on interpretation (1.78%) but two third on summary-description (3.29%). The summary-description reasoning questions that MS. Hen used decreased from 3.29% before the introduction of CR to 1.11% after
CR was introduced, her use of interpretation questions increased from 1.78% before the introduction of CR to 4.62% after CR was introduced, her use of evaluation questions increased from 0.57% before the introduction of CR to 3.60% after CR was introduced, and her use of generalization questions increased from zero before the introduction of CR to 0.26% after CR was introduced. These results also indicate that her reasoning questions were almost doubled or tripled in total when she led the CR discussions.

Figure 4.13 shows response displayed by students as percentages of their communication units. In non-CR sessions, they elaborated their statements based on previous remarks (14.32%), which consisted of almost half of all students’ responses.
The elaboration responses decreased from 9.35% before the introduction of CR to 4.97% after CR was introduced, the request for explanation-elaboration-clarification response decreased from 5.83% before the introduction of CR to 4.21% after CR was introduced, the negative response decreased from 2.64% before the introduction of CR to 1.38% after CR was introduced, the acknowledgement response decreased from 4.23% before the introduction of CR to 3.09% after CR was introduced, the restatement response decreased from 4.17% before the introduction of CR to 1.67% after CR was introduced, and the restatement response decreased slightly from 3.28% before the introduction of CR to 3.19% after CR was introduced. These results reveal that the use of all response categories decreased after CR was introduced.

Figure 4.14  Response Displayed by the Teacher as a Percentage of Her Communication Units
Figure 4.14 shows the response displayed by the teacher as a percentage of her communication units. Ms. Hen’s positive responses increased about four times, from 2.01% before the introduction of CR to 8.70% after CR was introduced. She also requested more responses to explain/elaborate/clarify the statements, from 6.96% before the introduction of CR to 10.17% after CR was introduced. She responded far less frequently at the “elaboration upon a previous remark” from 14.32% before the introduction of CR to 4.97% after CR was introduced, simply because she yielded her floor to the students and seldom made long statements to lead the discussions. Her restatement responses also decreased from 4.17% before the introduction of CR to 1.67% after CR was introduced.

In sum, these detailed analyses indicate that the nature of discussion in Ms. Hen’s class changed over time. After CR was introduced, students tended to elaborate their statements and used multiple knowledge sources to make their arguments. The teacher, Ms. Hen, changed her role from that of a main contributor before CR was introduced to that of a listener, facilitator, and responder after CR was introduced.

The changes between non-CR and CR sessions were also evidenced in my classroom observations. Before knowing CR, Ms. Hen told me that her strategy to elicit students’ responses was to share her own experiences as examples before students shared theirs. Therefore, Ms. Hen’s “Instructional Statements of Summary-description” was higher in non-CR than in CR sessions. However, in the CR sessions, Ms. Hen changed her way of eliciting students’ responses by asking more questions and making more tentative responses to students. After CR was
introduced, Ms. Hen’s statements were mostly for the purpose of restating or summarizing students’ points, or asking for elaboration, clarification, and reflection.

Ms. Hen altered her ways of reasoning after CR was introduced. In the non-CR sessions, Ms. Hen usually summarized the textual information, gave students the contextual knowledge necessary for understanding the stories, and asked students to rephrase what they knew about the characters, the plots, the time, and keywords. However, in the CR sessions, most of Ms. Hen’s statements and questions were to prompt the students to engage in deeper thinking about the central questions. She asked students to consider the pros and cons from various angles, and asked students to reflect how they made their minds and what the reasons to support their stances were. Although her strategies of conducting productive discussions by incorporating students’ comments into her statements were not picked up and utilized in CR by her students, these strategies still encouraged/prompted them to use different kinds of reasoning and multiple knowledge sources when they made statements or asked questions. The following excerpt illustrates how Ms. Hen’s remarks in a CR discussion functioned to prompt students to elaborate their remarks. This excerpt is from the discussion of Story 13 “Abandon”.

In this excerpt, when Emily told Ms. Hen that her choice was to let the dog die or have somebody killed them peacefully, Ms. Hen was surprised by her decision and she asked Emily to talk more about the reasons of sending the dog to the shelter.
Ms. Hen: Umm. just now Emily talked about (.). You want your dog die or have somebody, maybe kill it peacefully. Can we talk more about this?

Emily: Obviously you don't want to see it died like one day you come from school, it's like (gesture)

Olivia: That's really (.). scary

Emily: It would be more scare. But XX your dog left you and it's alive would be more than finding it, would be better than finding it died.

Ms. Hen: This all about the way that you want to live, or he has to die. kinda of it's.

Larry: It's, it's a movie on the box XX. They have like this box, and it's, they go to a family's house, and they say, if you push the button and you'll get one million dollars and one person will die. So they put either on your, like life, or somebody else's life. I don't know she pushes it, they choose her son, after a time run out of, runnn::nn far away to save themselves.

Emily: Wait. One person would die and did THEY put the dog?

Larry: [Nononono]

Olivia: [No She wants the money then other people choose to be sacrificed] I heard about that but.

Larry: [That was a movie]

Emily: [Of course] this was going to be someone important that worth million dollars. Like, if, but if, the situation is like if you didn't need the money, you wouldn't even touch it. You did need the money for some reason, they would take something valuable and exchange million dollars.
In line 1 and 2, Ms. Hen posed her question. In line 3 to 7, Emily and Larry elaborated their positions by explaining why they would rather let other people killed the dog peacefully. After listening to their points, Ms. Hen rephrased their words to show her understandings: “So that’s all (about) the way that you want to live or he has to die?”. Prompted by Ms. Hen’s question, Larry raised an example from a movie’s plot which the characters are told to kill a man to make a fortune of one hundred million dollars. His purpose was to explain his assumption to the value of life and family. Larry used his example to argue that he is interested in the topic “whose right should be sacrificed in this situation?” Then Emily and Olivia prompted to respond to his point. Emily’s response to Larry’s example in line 22 can be considered as a supportive argument which aimed at strengthening Larry’s points. And Emily’s comment to the movie made other discussants started to think about if the main character’s love to the dog would threaten her family’s welfare to pursue a better life. Then Emily restated her point again to convince everybody.

Emily: Like you could probably keep looking like a place that allows you to have a dog near the apartment. It might be expensive but either way somebody is expensive being a dog suffering like that. But I mean, it's being with you like ten years so it's like (.I mean having actually more money but then again comes to the point like it's old and dying in front of you, you want the dog or your family safe? (Transcript-0403-Story 13)

In this excerpt, Ms. Hen only asked Emily to clarify and elaborate her opinions. The students responded her questions and restated their concerns. After listening to the students’ responses, Ms. Hen did not make a comment about their points of view nor declared her opinions to the central question. Instead, she only posed a comment which showed her understanding to Emily and Larry’s statements. Ms. Hen’s
comment made Emily and Larry aware that they needed to provide more supportive evidences to their statements. Thus, Larry raised another example, which was about a frightening plot of a movie, to explain that why he chose the family rather than the dog. Then his example was echoed by Emily who restated her assumption by saying “sometimes the people need to sacrifice a life for a more valuable reason” (Transcript-0403-Story 13). Emily’s statement provided a new topic to the discussion which motivated other students to look at the value of life from a different angle.

By simply posing her understanding or summarizing her findings to the students’ remark, Ms. Hen made the students pursue deeper interpretation to the dilemmas. Her strategies of integrating students’ remarks not only encouraged students to “talk more”, but also drove them to “think deeper”. From this point of view, the role of “responder” like Ms. Hen played in CR discussions is quite different from the way that the students play the “responder” in non-CR discussions. The “responder” that the students played in non-CR sessions was mainly about asking for more details from Ms. Hen’s narratives on the contextual knowledge. But in CR, Ms. Hen modeled a good listener to her students. She rephrased other discussants’ words to help the discussants to think of their own statements broadly.

Third, echoing the finding in Marshall et al. (1995), the open structure, student-led discussion allows the students to adopt a wider variety of knowledge sources to support their arguments. The result also implies the improvement of quality of discussions. Following excerpt illustrates how students employed various knowledge sources to support her points. This excerpt is from the discussion of Story 10 “Gossiping”. In this discussion, Victoria was arguing with Michael about the
attitude to deal with bully in school life. Different from Michael who thought that bullying would never be solved by simply warning the bully offenders, Victoria insisted the most correct attitude to deal with bully is having a talk with the offenders and letting them know their behaviors are wrong. To support her points, Victoria shared a long story which happened to her life:

Victoria: =I have a friend and she had picked on during class just like, like a black muscle girl. She's in English class or here is a (,) a Korean girl was my friend and she said behind her and XX a pencil to poke her at the head and she had told the school about it and nothing happened. really (,)jumm, her, we brought her to the Subway's, her brother took us XXX, and her brother confronted her about it and she 6 never picked on my friend again because she's probably scared because, he, she will 7 take time to tell her "Why are you picking on my sister and you shouldn't do that because (,) you know if you pick on somebody else, somebody will (,) it will be like wices bigger then somebody will pick on you again so you shouldn't pick on other 10 people, you know?"

That happened, so. (Transcript-0227-Story 10)

Victoria’s story drove Emily to share her general knowledge to the bullying issue:

Emily: Oh, yeah, another thing is you can talk about this. Like. Talk about it. But like if you don't talk about the problem as soon as possible the whole school would be like "Oh, you're pregnant "But like if you talk to one person about it like 15 million other people will be like "Oh! She's pregnant stuff" Because they don't know. (Transcript-0227-Story 10). Then Vitoria’s example and Emily’s statement made Michael respond to Victoria’s arguments.

1 Michael: Well, I mean, obviously these are unpleasant people. And I mean, everyone in a while should like, you know, like and that's ending like (,) Victoria's talking about. ll But at the time it doesn't happened so, they definitely should try to confront them like V was saying but that might not necessarily work. Because (,) that probably feels like "Oh, ok we'll stop and there is not everything going to stop" They'll say to get some very big eye. Like Larry is talking about.
Michael and Victoria: [What?]

Larry and Olivia: [laugh]

Michael: You're some gangster like "Yo! You better stop talking about" They don't mind to have chance to connect to the Chinese Mafia, do they? [Cause that could be helpful.]

Students: [laugh]

Victoria: No, there's no Chinese Mafia involved I haven't known any Chinese Mafia, either Michael: That makes evil story but

Larry: Sometimes Asian Mafia make everything sucks XX

Olivia: Umm. Well, she would just tell her friend but (. I mean as it by ( (standard))

life you could be and do something and stay and walk away and just not care about it. I mean, it'll go away eventually. But, but if you hear something about your best friend, and you trust your friend and talk about a crazy person you don't know

Victoria: Or this is a quote that I had (.I've read whole bunch of them that I read. I think it's from Earth Battle. But it goes like "Those who say don't know but those know don't say" You guys get what the quote means?

Michael and Emily: Umm.

Victoria: It's like, the people that know they won't say anything but the people say they don't know about your life. so. It's all another thing.

The responses that Michael responded to Victoria in line 1 to 6 expressed Michael’s general understanding to the bullying behavior. To support his arguments, Michael even used the metaphor “Chinese mafia” to strengthen the impressions of the bullies in line 10. After making fun of Michael’s description, Olivia also shared her general understanding to the dilemma that the character faced in the story 10. Echoing to Olivia’s comments, Victoria quoted from a book she read before, which provided a good explanation to the nature of “gossiping” in line 21 to 22 and explained the quote to other students.
From the excerpts, the knowledge source students cited including their own life experience, the impressions of “Chinese mafia”, the general knowledge they have had about bullying, and their favorite reading. The reason for students to make use of multiple resources is because they wanted to strengthen their statements. In the discussion, the students understood that their audiences were also interested in those vivid stories, exaggerated description, and their favorite readings. Therefore, they tended to use those materials to strengthen their arguments. In non-CR sessions, Ms. Hen was the only audience to the students’ remarks and the students knew that she is only interested in the valid information shown in the text. On the contrary, in student-led discussions, the students knew that they had more audiences and they needed to use more interesting materials to draw other students’ attentions. As a result, a variety of materials were added in their remarks, especially real life experiences. This result partially echoes Marshall et al. (1995) that in student-led discussions, adaptation of self experience as one of the knowledge sources increases.

In sum, the analysis reveals that CR approach brings the teacher change and the quality of discussions. The open structure and reduced teacher intervention allows students to adopt a variety of knowledge sources in making their arguments.

4.2 Does the teacher’s participation in discussions change after the introduction of CR?

To answer the question, discourse analysis on the turn-taking rules and strategies that Ms. Hen adopted in non-CR and CR sessions are presented. Analysis of Ms. Hen’s turn-taking rules and discussion strategies focuses on the opportunities Ms. Hen provided for students to voice their opinions. I explore the strategies that
Ms. Hen used to control the topic, the flow of dialogue, and who takes the floor in non-CR and CR sessions. I also examine how Ms. Hen’s strategies affected the students’ participation in discussions.

### 4.2.1 Ms. Hen’s discussion strategies in non-CR sessions

Before Ms. Hen learned about CR, Ms. Hen followed her own philosophy about discussion. She told me that she tried to give up the teaching style that she used in Taiwan and tried to listen to students first before she stated her own opinion. She said that, when she taught in Taiwan, she was the only one who talked in the classroom. However when she came to the Chinese school, she found that practice was not suitable for these students. Therefore, she changed her teaching style and made an effort to engage students in classroom discussion more often. Following is a quote from the interview with Ms. Hen before CR sessions began.

“(As for discussion)…..well, I would like to ask them “what do you think?” because I don’t like to take over all of the topics without listening to their opinions. I mean, when I taught in Taiwan, either in cram school or in the college, that’s what I did. I feel like if I talked too much, it’s kinda of “impose”, you know? I don’t want the students to think that I’m forcing them to follow my rules. …..so what I’m doing is I will bring the issues then I’ll ask their opinion first. Then I will bring my opinion or my experience, as exchange.” (Teacher-interview-November 1, 2010)

However, from my observation, Ms. Hen did not give up all of her authority when she led discussions. She expected every student to follow her steps and to focus on the topics that she chose. To make students pay attention to her questions and make sure everybody talked, she would nominate students to answer her questions. A common discourse pattern followed an IRF (Initiation-Response-Follow up/Feedback) structure (Coulthard, 1975). Ms. Hen would ask a question, the student responded, then Ms. Hen would evaluate the response, saying: “Good” or by asking
students to clarify his or her answer. Following is an excerpt from the transcript of discussion about Story 1 “Scholarship,” In this story, a principal faces a dilemma in deciding the winner of a scholarship. Ms. Hen asked her students which student they would choose to be the winner of the scholarship if they were the principal. Ms. Hen first asked students to express their opinions about the two characters, Xiao Lan and Xiao Hui, in the story. And she had students state their opinions about the rules for the scholarship. Then, she asked the students to make a choice between Xiao Lan and Xiao Hui.

1 Ms. Hen: Principal DXXX. Who would you choose to give the scholarship to
2 Victoria: Umm
3 Ms. Hen: Tell me the names. Xiao Lan or Xiao Hui?.
4 Victoria: Xiao Hui.
5 Ms. Hen: Xiao Hui. OK Do you want to provide your reason?
6 Victoria: Umm. No. She's very poor ↓Ummm Because she got XXX
7 Ms. Hen: OK. Very kind principal. OK Principal Lin .Emily Lin
8 Larry: Ms. Principal Lin. (turn to E)
9 Emily: I would if there is no absolute mean, no rule struggle I would to give it to the second place, to be honest So Xiao Hui
11 Emily: If there was a way not giving her secure (smile)
12 Ms. Hen: (laugh) OK. Then (look at L)

(Transcript-S1-September 26, 2010)

From line 1, we can see Mr. Hen asked the students to provide their answers in turns. She first asked Victoria “who would you choose?” “Tell me the name”, then she asked Victoria to “provide the reason”. After Victoria stated her opinion, Ms. Hen then turned to Emily for answer to the question. Then in line 9, Emily clearly stated her reasons and her choice. Ms. Hen praised her by saying “good”. Then she
made eye contact with Larry to cue him as the next person to answer her question.

This kind of IRF pattern was not the dominant discourse pattern in the non-CR sessions, but it did appear when Ms. Hen felt the need to ask everyone to follow her steps before she allowed the students to freely express their opinions. This IRF pattern also appeared when Ms. Hen wanted to draw students’ attention to a new question or the drills that Ms. Hen prepared for them. However, sometimes, Ms. Hen’s effort did not work. The students, especially Larry and Emily, would challenge her authority by selecting themselves as the next speaker. At this time, Ms. Hen would try to take back the floor by restating her question. Her purpose in restating the question was to get the floor in order to initiate another round of IRF patterns. The following excerpt is also from the discussion of Story1. Ms. Hen asked the central question “who would you recommend?”

1 Ms. Hen:   Umm (.) Right So (.) So (.) First question: who would you recommend?
2 Emily:     OK. Truly I would say the second place. But I have to follow the rule. I have
to give
3                       [All right]. You can tell her the perfect rule
4 Larry:      [There is no perfect] rule
5 M:          [That's talk about] the How to revise (. ) the (. ) the kinda of rules. That's
6 Ms. Hen:    talk about the (. ) your decision first. If you are the principal.
7                       8 Michael: This is also depends on the rule of scholarship. It is not a XXX
8                              scholarship. It didn't mean to the XXX scholarship
9 10 Ms. Hen:  (nod)
11 Michael:   If you mean XXX. People [XXXX]
12 Larry:     [snap his pen]
13 Emily:     She is like I don’t mean it's like first deserves first. She deserves that =
14 Larry:     = But but
15 Emily:     She is the first place. But the second place person =
16 Larry:     = needs more =
17 Emily: = She probably needs more. She doesn't have money
18 Ms. Hen: Ummm
19 Emily: S:::o
20 Ms. Hen: So Principal Emily tell me your decision (look at A)
21 Emily: Well. I was thinking
22 Larry: Umm
23 Ms. Hen: OK You said you give the money to second place Xiao Hui. OK (point to L)
24 Larry: But if you were the principal, why you have the access to change the grade,
25 to give the [scholarship]
26 Emily: [No]
27 Olivia: [ But you cannot] cheat students
28 Emily: How would you like it if the principal changed your grade for one
29 scholarship?
30 Olivia: But no. Bur (.) He wouldn't care. But if=
31 Larry: = [No body care]
32 Michael: = [If you don't XX grade] Why do you want the scholarship?

In line 1, Mr. Hen posed her question about “who would you recommend?” Emily said her choice and stated her reason “I have to follow the rule.” Her statement prompted Larry and Michael to respond to her “rule” statement. Hearing the students’ responses, Ms. Hen stated that it was OK to talk about how to revise the rule, but she still wanted the students to make choices before they discuss the rules of scholarship. Michael disagreed with Ms. Hen’s decision and said “This is also depends on the rule of the scholarship” in line 8. Ms. Hen did not say anything in response to Michael’s statement, but just nodded. Then, from line 12 to 17, the students took the floor and continued their discussion about the rules without Ms. Hen’s intervention. After they temporarily suspended their discussion about the “rule,” Ms. Hen restated her question again in line 20 and clearly asked Emily to
answer the question: “So Principal Emily, tell me your decision.” By doing this, Ms. Hen again took back her authority for selecting the speakers to make sure everybody answered her first question and stated their opinions.

Another situation where Ms. Hen tried to control the topic was when Ms. Hen felt the need to “teach” students something new or important, such as the new key words or phrases for students to use in the discussion. Following is an excerpt from the discussion in Story 4, “Cheating.”

1 Ms. Hen: OK. So you won't tell the teacher?
2 Larry: (nod)
3 Ms. Hen: OK. (2.0) But you will get punished. (point to the text)
4 Olivia: But teacher doesn't find out
5 Larry: Well. I'll say first. I'll not do it.
6 Ms. Hen: Oh. You mean before [teacher tell you ]
7 Larry: [yeah, before teacher find out]
8 Ms. Hen: [before even the]
9 Emily: [This is asking you] what happened, if happen, what would you do?
10 Ms. Hen: OK. 好，很好，沒關係，反正 Larry 就是不會講 (Fine, Larry won’t tell the teacher anyway), you don't sell your friends. Right?
11 不會出賣朋友 (Won’t sell the friend). 來 (Ms. Hen turns to the board and writes down phrase 出賣) 我們學這個字喔 (Now we learn this word), 出賣 (sell)
12 out), 出賣 means, like sell your friends. Am I right in English?
13 Olivia: Yes, sell out.
14 Ms. Hen: You don't sell your friend.
15 Olivia: no. Sell out. [Sell out your friend]
16 Ms. Hen: (writes down tones and pinyin of 出賣朋友 on boards)出賣朋友

At the beginning, Ms. Hen and Olivia were talking about Olivia’s choice “If I was Yuan Yuan, I won’t tell the teacher that her good friend cheated in the exam.” Then Larry joined the discussion and said “Well, I’ll say first. I’ll not do it.” Ms. Hen
then confirmed Larry’s choice and said “Fine, Larry won’t tell the teacher anyway” and she wrote the phrase “sell out” (出賣) in Chinese. She then asked the students to pay attention to the new phrase “sell out” in line 10 and asked students to translate it and repeat this phrase several times. Sometimes Mr. Hen even suspended the discussion and asked the students to make sentences for the new phrases. This kind of mini-lesson was very common in non-CR sessions and the students were used to this regime.

While discussing the dilemma that characters in a story faced, Ms. Hen also made clear her position, just as the students did. Ms. Hen would clearly state her position after she listened to everyone’s points. Her comments either contradicted or supported students’ opinions. She also shared her experience and occasionally elaborated on relevant topics about cultural, economic, and social conditions in current Chinese society. When Ms. Hen shared her experience, the students listened to her carefully and rarely interrupted her. Ms. Hen’s opinions usually became the dominant opinion in the discussions.

The following excerpt illustrates this situation. This excerpt is from the discussion of Story 3 “Study abroad” (出國留學). This story is about a Shanghai girl “Wei Wei,” who is studying to become a good chef. Wei Wei needs to take care of her parents who were suffering from a chronic disease. One day, Wei Wei is told that she has been admitted with a full scholarship to a famous cooking school in France. She is happy but she does not want to leave her parents alone in China just because she wants to follow her dream. After reading this story, the students discussed
whether or not Wei Wei should go to France. Almost all of the students said that if they were Wei Wei, they would go to France and try to find someone else to take care of her parents. They listed the reasons why Wei Wei should go to France and the students came to a consensus that if Wei Wei completed the training in France and became a good chef, she could make more money for her parents in the future.

After listening to students’ opinions, Ms. Hen said “You know when I hear you said, you would go and you will get scholarship and you would make money and pay somebody to take care of your parents, I feel crime. Because, have you thought about, if you go and then die, they die, they couldn't wait till you come back. They couldn't wait till you make money for them” (Transcript-Story4-October 17, 2010). Her questions prompted students to reflect on their previous decision:

8 Ms. Hen: Just what you said, she might be able to go to cooking school in Shanghai.
9 Emily: She doesn't have to go to France. I mean it's [it's about]
10 Larry: [It's talking about XX] number one
11 Emily: That's a dream and she [should go].
12 Ms. Hen: [And And who can guarantee] that if you go to France and go to the cooking school you can be the No. 1 chef?
13 Larry: But you can learn Italian food.
14 Victoria: You have many opportunities to [learn it]
15 Emily: [So like] your parents (.) like got you this far and you should stay with them
16 Larry: but it's like (.) I don't know it's like you should do something better to your future
17 Emily: or stay with your parents?
18

From the discussion, we can see that when Ms. Hen expressed her opinion, the students started to change their sides on this question. Then Ms. Hen started to share
her own experience as an international student who was studying abroad far from her own parents. And Ms. Hen drew inferences from the social values in Chinese society that encourage children to show piety to their parents and put their parents in front of their own life plans.

19 Ms. Hen: Yeah. I have, I have the same dilemma when I, when I, when thinking if
20 I should come here or stay with my parents. But the teacher said you shouldn't ever
21 go because, because you won't know what will happen to parents. If you go for
22 three year, five year, ten years or even forever, when something happened to
23 them and you can't come back with them you will kinda of regret for your whole
24 life. Because we have the tradition like, if you're parents are dying, along, kinda of
25 [stay with them]=
26 Larry: [along the side]
27 Ms. Hen: =along the side, Otherwise it will be very serious=
28 Emily: =disrespect?
29 Ms. Hen: =disrespect. And people will criticize these children are very very
30 [bad children]
31 Larry: [That's great]
32 Ms. Hen: [because they]=
33 Emily: [Why you looking on me?] (stared to S)
34 Ms. Hen: And the Confucius (stared at S and A) says, umm, when you're parents are still
35 alive, children would go away. [01:04:39.22] won't go far away. I think
36 that's because in the old time, even you travel from Champaign to Chicago, it takes
37 days. So when you got bad news, you couldn't come back in time. But now it's
38 different like you can call back home always and you can call back to your parents
39 everyday and if they, kinda of the, if they're unhappy, they're not healthy, you can
40 go back within [24] hours.
41 Emily:[twel~]
42 Ms. Hen: OK if I start from now I take two hours to Chicago and like take another fifteen
43 hours fly from Chicago to Tokyo, and I transfer and like I take another
44 three hours, fly, fly from Tokyo to Taiwan, it takes probably 24 hours or even
45 more
46 But it's still faster than month. Like six month or years. In old time, 一千年前,
47 people will never travel from Taiwan to USA. It's never possible, right? It's
impossible. So it's really, it's really difficult XX. I mean, what you're thinking right now, you thought it's for better education, it's for more money and I can always take care of them and when I have more money I can even pay somebody do that. But that's that's I wouldn't say that's not correct. It's correct, it's more realistic. Let's think. if you're parents, what do you want for your children? You want them to be very successful? To be famous people? To be the number one number one people in the world? Or you just want to, you just want to be with then? You just want to hug, you just want to call, you just want to come back every two week, to kinda of a, having dinner with you? I don't know what you would say to that. And your parents feel and how you feel when you have your own children. That's think about this This is more about a family value issue. It depends on how you feel about your family.

To persuade the students, Ms. Hen spent a lot of time stating her concern about the issues of distance and time that an international student faced when they are apart from their parents to support her argument. When Ms. Hen talked, nobody tried to question her or express their own opinion. After she told her story, the topic of discussion changed. The students started to ask about Ms. Hen’s life experience and then listened to Ms. Hen’s talk about the policy of birth control in China and the meaning of a child to a Chinese family.

The decision that Ms. Hen made—to treat herself as one of the discussants who also had the right to choose a position and make arguments—had two effects. The first was that Ms. Hen was able to influence the students’ decisions. Moreover, because she was the leader of the discussion, her opinions were valued most and she was rarely questioned by the students. This means that, compared to the students, Ms. Hen had the authority to make judgment about their decisions. It was also easier for Ms. Hen to take the floor and influence the discussion by using her status as the
teacher. The second was that students had opportunities to learn a different point of view from her, a native Chinese speaker who had also faced cultural conflicts between Chinese-American culture.

Ms. Hen’s strategies for leading discussion influenced the roles that the students played as discussants. Ms. Hen’s questions encouraged the students to brainstorm possible solutions about the questions. Guided by Ms. Hen’s leadership, the students elaborated each other’s word, or contradicted Ms. Hen or other students’ statements. But Ms. Hen still held the power for taking the floor. Furthermore, her leadership role meant that students considered Ms. Hen’s comment as the final answer to the question. After the discussion, the students would wait for Ms. Hen to express her opinion, and this was usually the signal that this was the end of discussion.

Ms. Hen was also the main contributor of knowledge when students had problems in making inferences from the text. When they had problems, the students usually waited for Ms. Hen to take the floor. Ms. Hen would either tell the students her explanation or she would tell them where to find the answer. The following excerpt is from the discussion of Story 2 “The River God” and illustrates an exchange between Ms. Hen and her students on finding information about the reason for the ancient ritual and the geographical characteristics of the Yellow River.

1 Emily: I mean. If it happens every year, it's natural. But it's the nature.
2 So why the people will have this anyway (look at Teacher)?
3 Ms. Hen: Yes. So, the, the, the, the location means something (turn to the board of the Yellow river map). Because it's just along the Yellow River (point to the map) And the Yellow River flood every year. It's kinda of this geographic features. It will flood anyway. But people didn't know why the river got flooded
because human beings, [because of God. Or (.)

8 Michael: [But there is ]

9 Ms. Hen: They didn't know it will flood anyway. Right? So, this is a, this is a=

10 Emily: I mean like, if after a while, why people can't understand even though you

11 sacrifice your daughter, it's still flood anyway?

12 Michael: I don't think. I don't think that's actually thousand years ago I think it was

13 several thousands years ago. Or they made it up two thousands years ago

14 Ms. Hen: (tittering) Yeah, it could be several thousands years ago.

15 Michael: I mean one thousand years ago. They kinda of already figure that out.

16 They like already know

17 Ms. Hen: Umm. Thousand years ago.

18 Emily: Probably there is XXX

19 Larry: Or C EE or CP or C.D. or something.

20 Ms. Hen: Thousands years ago, (turn to Researcher, me) which dynasty it is?

21 I: [It's Song dynasty.]

22 Michael: [Well, umm]

23 Ms. Hen: Song Dynasty

24 Michael: =Isn't like a XX with the water god?

25 Ms. Hen: Well, if it's in the city. No problem. There are some sci-scientific already.

26 But it's in the, in the country side. Those people are not well-educated. They don't

27 even go to school so they will just believe what people said. So that's the (1.0) I

28 think they're poor people. Poor in their property and in their knowledge. So let's

29 see. Here is the key word 一千年前. Somebody said: "If you don't want to

30 sacrifice your daughter, why don't you sacrifice yourself?" (look around everyone)

In this excerpt, Emily was asking why the villagers still chose to cast a girl to the river since flooding is just a natural phenomenon. Emily looked at Ms. Hen for her assistance. Ms. Hen then started to explain the geographical factors of the Yellow River in line 3 to 7 to point out that the Yellow River is prone to flooding since it curves when the river passed Henan Sheng. Finding that Ms. Hen didn’t get her point, Emily reformulated her question again, “I mean like, if after a while, why people
can't understand even though you sacrifice your daughter, it still flood anyway?” Her question was replaced by Michael’s question which asked if something is wrong with the date of the story. Michael thought people one thousand years ago would be able to figure out the reasons that the Yellow River flooded every year. Ms. Hen then provided her own explanation based on the context of the story—the villagers who lived one thousand years ago might not be equipped with sufficient scientific knowledge to figure out the reason that the Yellow River flooded. Then Ms. Hen asked the students to find the key word “一千年前” (one thousand years ago) in the text to support her explanation. Then she raised another question.

In sum, the analysis of non-CR sessions indicates that Ms. Hen always asked students questions and encouraged students to think about the questions from different angles. Prompted by her questions, the students engaged in brainstorming to find possible answers to the questions. However, the students seldom had the power to control the floor or to initiate the topic of the discussion. Students seldom actively sought better solutions when they faced contradictory opinions but waited for Ms. Hen to state her opinion as the final solution. They would wait for Ms. Hen to take the floor and move the discussion to the next step. They also considered Ms. Hen the main resource for solving reading problems or for finding answers from the text or from relevant cultural knowledge.

4.2.2 Ms. Hen’s discussion strategies in CR sessions

After Ms. Hen had received the necessary training in how to lead a CR discussion, she initially experienced some difficulties transitioning to this new model. The characteristics of CR, particularly its open participative structure, were a
struggle for her. She knew that she should not nominate students to speak or intervene in the discussion by stating her opinions. However, Ms. Hen still called on students to answer questions during the first few sessions when she observed that some students did not join the discussion or took the discussion onto issues which, she felt were off topic. Although the behavior of nominating students gradually diminished in the following sessions, it was present in the earlier CR sessions. However, when compared to the non-CR sessions, Ms. Hen was more mindful of students’ willingness to take the floor. If the students showed that they were expected to take turns by themselves, Ms. Hen would not force them to follow her rule. Instead, she allowed the students to self-select the next speaker.

Another change was the role that Ms. Hen played for the students. Before the CR sessions, Ms. Hen considered herself as the main provider of knowledge in the classroom. She answered the students’ text questions directly and taught the students how to find the answers in the text. However, after implementing a CR framework, Ms. Hen tried to draw the students into a situation where they co-constructed knowledge. For instance, she would ask students to make inferences from the text or from their own experiences to answer the questions by themselves. Ms. Hen also stopped her mini-lessons about key words during the discussion in order to maintain the smooth flow of ideas. The following is an excerpt from December 12th, the second session of CR discussions. The students were discussing Story 8 that is set one hundred years ago in the United States. This story is about a group of villagers who tried to escape from fierce robbers by hiding themselves in a big cave. The villagers tried to keep quiet when the robbers were approaching the cave. Suddenly, a
little baby carried by a young mother cried. People panicked and asked the mother to cover the baby’s mouth. However, this mother found that she could not cover the baby’s mouth because it made the baby suffocate.

Afterwards, Ms. Hen led the students in an examination of the text and she nominated each student to state their opinion in turn. However, when she nominated Emily, Emily did not make her choice but instead asked a question: “I have a question. Why do they need to hide in the cave, why can't they flee to somewhere else?” (Transcript-Story 8-December 12, 2010) The question she asked initiated a dialogue about another new topic. Aware of this, Ms. Hen did not force Emily to go back to the central question or answered Emily’s question directly based on her understanding. Instead, Ms. Hen asked Emily to rephrase her question and encouraged other students to respond to Emily’s question. Then, Ms. Hen listened to their arguments carefully and asked others to clarify or expand upon their points, as needed. The conversation flowed as follows (Transcript-Story 8-December 12, 2010):

1 Emily: I have a question, why do they need to hide in the cave, why can't they flee to somewhere else?
2 Ms. Hen: Why? Why can't they just move? You know, it's wild west
3 Larry: The wild west?
4 Michael: There kinda of horses or something
5 Larry: There were horses. But they don't make that. It's XX goes town. It's on suck
6 Emily: I mean like if you hide
7 Larry: It's like, it's like a place lots of gold in it. And what's the plan of leaving?
8 Ms. Hen: So, anyone got the reason that they need to hide in cave?
9 Emily: I still don't have it. [I still have the question]
10 Michael: [Well, they don't want to get killed]
From the excerpt above, it can be see that the students started to develop their own topic, which focused on a better way that the villagers could have protected themselves. The students’ discussed as to the geographical character of the West and the methods of transportation that people used one hundred years ago. They examined each other’s opinions carefully to find possible solutions. Interestingly, at this time, Emily took the role that Ms. Hen played before and used the strategies that Ms. Hen used to lead the discussion. She helped other students to elaborate on their points, repeated what other students said, and posed new questions for the other students based on the previous exchanges. The following is an excerpt from this discussion that illustrates this:

22 Michael: =Maybe that's many caves.
23 Larry: Yeah, thousand of caves and they can’t find them Could’un't they separate and hide in different caves
24
25 Emily: And then why everybody hide in one cave and there so many caves?
26 Michael: And they'll have the chance to find someone
27 Emily: Yeah but=
28 Larry: =And then separate one thousand people and each one person in each cave
29 and then they'll have just one person die
30 Olivia: Yeah, but they're going to find other villagers people in other caves
31 because there is only on villager. And there has to be one more person, so
32 Larry: Yeah. And everybody want to=
33 Olivia: =You know you can split it and they find the caves and everyone's dead=
34 Larry: =They can hide in three or four caves and then =
35 Emily: See there are like. Larry wondered if like, everyone hide in a cave and if
36 they find the cave, everyone die. But if you separate them, then=
37 Larry: =Make it smaller groups
38 Emily: =other people live but they will know there is more
39 Larry: Why couldn't they just take off all of the stuff?
40 Emily: All you probably practically need is something like food and money.
41 Because I mean, like, your other stuff XX the that stuff and you're going to live. So
42 probably you will [XX to eat] and have money to buy some stuff

(Transcript-Story11-March 6, 2011)

In this excerpt, Emily asked other students “Why everybody hid in one cave and
[why were] there so many caves” in line 25. And she rephrased Larry’s question in
line 35. She also elaborated on Larry’s question about the things that villagers
brought with them and pointed out that the food and the water was another factor that
the villagers considered. The excerpt presented above also reveals how, initially, he
students competed with each other to take the floor, rather than cooperate with each
other, after Ms. Hen had relinquished control over the conversation. There are a lot
of speech marks “=” in the transcript, which describes how often the students
interrupted each other’s points in an attempt to take the floor, without really listening
to what other students were saying. The turns between the students’ talk were
therefore short because it was so rare for students to wait for each other to complete
their statements. In light of this, Ms. Hen spent a lot of time addressing this issue by restating the rules of discussion before future discussions commenced. She also chose to intervene in the discussion if she believed that the speaker was ignored or disrespected by other students. In this way, Ms. Hen did not directly ask students to listen to the speaker, but just instead reminded the students of the rules of the CR discussions. The following excerpt in the discussion of Story 11 illustrates the strategies that Ms. Hen used in order to deal with this situation:

1 Ms. Hen: OK. Discussion. 如果你是小智，你會參加舞會嗎？ (If you were Xiao Zhi, would you go to the party?)
2 Larry: Yes.
3 Emily: Yeah.
4 Ms. Hen: Will you go to the party?
5 Larry and Michael: Yes
6 Larry: Do the party, God
7 Michael: Maybe you mean like a cheat, like "you can be my mom now"
8 Emily: But what if his mom very scary, if she's could beat us?
9 Larry: She has, she has a giant baseball bat =
10 Michael: =OK, his old mom really couldn't beat disbehaved boy, it's a crime.
11 Larry: It's called child abuse.
12 (Michael and Larry looked at each other and chat privately, T signaled them to listen o Emily 's talk)
13 Emily: Well, I have a XXX Well, XX Because when I was younger, or XX
14 something, I’ll ask my mom. And like over the time, I'll ask my mom. So she
15 would always say no. And I don't bother asking her anymore so I just say no, I
16 can't to my friend. And overtime my friend stop asking me
17 Michael: 小智久而久之就沒有朋友了 (Over a period of time, nobody wants to
18 make friend with Xiao Zhi)
19 Emily: Well, not to hang out or anything
20 Ms. Hen: Remember our rules for discussion?
21 Victoria: Don't talk while other one's talking
In the excerpt, in line 19, Ms. Hen noticed that the other students did not listen to
Emily but instead chatted among themselves. Ms. Hen chose to intervene in the
discussion by saying: “Remember our rules of discussion?” in line 22. Her statement
was echoed by Victoria before the students continued their discussion.

The excerpt above also illustrates the strategies that Ms. Hen modeled for the
students in order for them to make inferences from the text. After Ms. Hen raised the
central question, the students started to express their opinions. Then students
discussed the way that Xiao Zhi reacted to his mother’s anger and their own
experiences with the problem. When students elaborated on their arguments, Ms.
Hen referred to a saying from the text “小智久而久之就沒有朋友了 (Over a period
of time, nobody wants to make friends with Xiao Zhi)” in line 19 to support Emily’s
comments (Transcript-Story11-March 6, 2011)

What Ms. Hen did here is quite different from what she did in the non- CR
discussion. In the non-CR sessions, Ms. Hen usually modeled the strategies through
direct instruction. However, at this time, Ms. Hen tried to model the strategies
without directly intervening in the discussion, but instead used her quote to support
Emily’s comments.

However, in CR sessions, when it came to the discussion of argumentative skills,
Ms. Hen would take the floor. The following is an excerpt in which Ms. Hen evaluated the students’ performances and discussed with the students what they should do to improve their argumentation skills. It occurred in the discussion of Story 11 “Should tell or not?” (該不該說？)

1 Ms. Hen: So you know, I mean, I, I, I really want you guys to think about why do you think, like, why do you focus on should tell or should not tell? Well, I mean, Larry mentioned it's not fair. And you mentioned that for the sake of the health or the food, the, the, the food to keep the food clean, I really like the strategies that you also talk about umm (.). Why (. ) the importance of washing your hands. And specially good that Emily mentioned that the purpose of her working I mean those are related issues. You know, why do you care? You think, ok. All of the people are regulated by the rules so you should follow the rules, you're asked to follow that you're supposed to follow. But why is that important, why is it so important to be fair to everybody, to follow the rules. I mean, you have your purposes and I have my purposes to get this job. OK. So what do you want to say, Victoria?

12 Victoria: Umm. OK. What if he look like if, a little different, he could be like does everything on task and never fails to do his job and he just forgot once rather than he is a sloppy person he doesn't do what he does and (. ) you call it (. ) You know what if he's just mistake and he just forgot to work out rather than he was not doing everything he does everyday

17 Emily: Also like, if you usually wash your hands, it wouldn't hurt if you didn't wash once. But like if washing hands, just soap, water, 20 seconds, and like if that (1.2), like if you just wash your hands and doesn't calls people to try to get you fired, customers complaining, they'll mind when do you do that, just wash your hands. Like if he doesn't do it on purpose just too lazy then that's a different story but if you if you don't want all that trouble washing your hands would be like the easiest thing to do.

24 Ms. Hen: So I think we get probably most of the points because I feel, I feel particularly good today because you kinda of address various of points. And =

26 Michael: =Umm. One thing related to the essay stuff, is discussion is good, but never do this on essay. Always stick to the question and=

28 Ms. Hen: =Exactly.
Victoria: Yeah
Ms. Hen: Kinda of goal-oriented. You have to stay on the goal and argument on that goal. That's the strategy. But I mean, while you're preparing for the debate or argument. I mean, think widely is important. You have to think from different angles. What's the purpose for her to go to the restaurant? That works

(Transcript-Story 11-March 6, 2011)

From lines 1 to 11, Ms. Hen summarized the students’ points of view and she indicated that there are more questions that the students could address in order to elaborate on this topic. Responding to Ms. Hen’s statement, Victoria and Emily rephrased their points of view and Ms. Hen addressed them by raising diverse points as strategies of discussion. Her statement was reformulated by Michael in line 26 who proposed that sticking to the question, particularly in essay writing, is also important. Echoing Michael’s point, Ms. Hen then concluded that the argument should be “goal-oriented” and she asked the students to reflect on their methods of presenting their arguments.

As mentioned above, the times that Ms. Hen used to take the floor during CR discussions were when she wanted to initiate the discussion on argumentation or on reading strategies. However, there was another situation in which Ms. Hen tried to take the floor –when everybody stood on the same side of an issue. In this instance, she would ask students to weigh their reasons from different angles. At this time, Ms. Hen still treated herself as one of the discussants and would display her own choices to the other side. However, in contrast to the way that she conducted herself during non-CR sessions, Ms. Hen did not spend a lot of time stating her points, or sharing...
her experiences in order to convince the students to support her opinions. Instead, she used her own opinions as a tool to question students, asking them to reflect on the different opinions that people expressed. The following is an excerpt from the discussion of Story 13 “Abandon” (棄養), which illustrates how Ms. Hen used her own opinions as a tool to make the students strengthen their own arguments. It was the last story in the CR sessions:

In this story, a little girl needs to give up her beloved dog because her father lost his job and, as a result, the family needs to move to a cheaper apartment in which pets are prohibited. Students discuss whether the girl should insist on keeping the dog. Needless to say, the students were also seeking possible solutions to this problem.

1 Emily: Yeah. I was going to say that. Like you could probably keep looking like a place that allows you to have a dog near the apartment. It might be expensive but either way somebody is expensive being a dog suffering like that. But I mean, it's being with you like ten years so it's like (), I mean having actually more money but then again comes to the point like it's old and dying in front of you, you want the dog or your family safe?

7 Ms. Hen: Yeah. I mean, to me, it died naturally in front of me I XX anything because people die, animals die, creatures die, but if somebody try to kill him, I think that would be hurt. That's my point of view. So do you have any other ideas if we go to another XX life or something else?

11 Olivia: Umm. There has to be somebody taking care of the dog I mean if if they just watch dog and XX of money to get a house XX the dog or you could just ()

13 umm () I don't know () umm () or you could just keep it outside, right? rather than inside the house or something

(Transcript-Story 14- April 3, 2011)
From lines 1 to 6, Emily made a statement about why she advocated for sending the dog to the shelter. The main reasons that she raised was one of finances: keeping that dog was a burden to the family and, as a member of the family, the girl should also be required to contribute. Therefore, this family definitely could not provide a good standard of living for an old dog. Ms. Hen then raised another point, which she stated as being her point of view, in line 7 to 9: “To me, it died naturally in front of me I XX anything because people die, animals die, creatures die, but if somebody try to kill him, I think that would be hurt.” (Transcript-Story 14- April 3, 2011) Then she asked whether somebody could respond to her question. Olivia responded, restating the difficulties of taking care of the dog if the little girl wanted to keep the dog healthy. Also, she would need to find someone else to take care of the dog or keep the dog outside of the building. After Olivia stated her points, Ms. Hen pointed out that both Olivia and Emily were talking about financial issues only. The little girl needed money to find another place for the dog or somebody else to feed it.

In the latter sessions of CR discussions, a model of the discussion format was gradually formulated. The following excerpt from the discussion of Story 11 can be seen as an example:

1 Ms. Hen: 好來，如果你是小梅，你會怎麼做？So the dilemma is she thinks everybody should follow the rules. Right? But the manager who define the rules broke it, himself or herself? And, So she, if you were Xiao Mei, what would you do? So first of all, say your standpoint, argument and elaborate it. And then restate your point after the discussion to see if you have changed, OK?

6 Larry: Well, I would say I will tell the boss because it's not fair. If he or she doesn't follow the rules like me. Because=
196

8 Olivia: No. You shouldn't do anyway.

9 Emily: [Well],

10 Larry: [Uhh?]

11 Emily: Well, obviously I'm not going up to the manager be like "Hey, wash your

hands" and so (.) so (2.0). And you can't go up to the boss and say he or she doesn't
wash their hands. You do have to prove you know.

14 Ms. Hen: Umm

15 Emily: So (1.3) I forgot. OK. Now I remember, like, you can't just go up to the
manager and say you need to wash your hand. First of all, he has more power than
you. So the only way is going to the boss. But if the boss trust 15 the manager,
that's why he's the manager. That's the hard (.) position you're in because you're not
anyone but a worker. So, if you can't do anything, I would just do my work, wash
my hand because either way is necessary, like serving food to other people. So
either way, I would just mind my own business. Like (.) If I have a way to say it,
I would. Because you cannot just not wash your hand. You can't. That's nasty.

23 Victoria: Well, I will tell the boss, umm. Because if you were a manager, you
would have to be honest what you did. Like, umm, Xiao, wasn't Xiao Mei her
name?

26 Ms. Hen: Umm.

27 Victoria: If Xiao Mei would have told the boss, then have a conversation, if you
were the manager, you would have to be honest, because you know, if you took
that job, because, I don't know, you're probably good at it, or you
really honor what you do, that's why you got that position. So, if you would
confront about it, then, she said that, she didn't do it, and she told the manager, and
the boss asked the manager, and he probably have to say, yes, he did. But either
way you can get fired or not fired because you're being honest so it doesn't really, I
don't know. I don't know. You guys know what I'm saying?

Umm.

35 Emily:

36 Olivia: Yeah. Well, I have a question. Well, what do you tell them, like isn't that a
kinda of a bathroom with stall and sink are in the open? Like, because anyone
could just walk out and watch and just ask if they forgot to
wash their hands. If they say something, may be they would.

40 Ms. Hen: That could be the reason that she know the manager doesn't wash his
hand. And to be honest, she probably is not the only person who find it out.

42 Olivia: Or they could write a script letter to the boss.

43 Ms. Hen: So Olivia, you say you would write a secret letter to the boss?
Michael: OK. OK. OK. Thank you. The big fear she has is to being fired, right?
And also, she doesn't want to make the manager to feel bad. I mean, you know.
And, so, to avoid him feeling bad, she has to make sure that she

talks to him in private, you know, so she doesn't humiliate him in front of other
people. And then also if she's getting fired she could like a, like a, record in pocket
or something, so you know it. If the staff goes down she has a prove that she
has XX against her and then she could challenge for XX.

Victoria:
(tittering)

Emily: Umm. One way you could do which is just a long way is that customers
has power, also. So if the customer sees the manager not wash hands, you can
complain to the boss, and, like, bosses don't like customers complain. So like
the customer saw, and the manager has nothing to say about it because the
customer saw it. And the worker might be like "Oh, yeah, I saw it, too. I just want
to say it."

(Transcript-Story 11-March 6, 2011)

At the beginning, Ms. Hen posed the discussion question both in English and
Chinese and reiterated the principles of the CR discussion format. She used a lot of
time reiterating the principles of CR and asking students to mind the rules. However,
she did not nominate any particular student to answer the question. After her
questions, Larry automatically took the floor and stated his points. However, his talk
was interrupted by Olivia and then Emily took the floor. Emily gave a very
sophisticated statement about her reasons for not telling the boss of the restaurant,
some of which were from her own experience. When Emily was talking, Ms. Hen
just listened to her. Ms. Hen did not give any positive or negative feedback on her
statements but just said “hmm” to express her attention to Emily’s words. After
Emily’s statement, Victoria elected herself to be the next speaker and responded to Emily’s utterances. Then Olivia raised a question about the contextual knowledge of the story. After listening to Olivia’s question, Ms. Hen said “That could be the reason that she knows the manager doesn't wash his hand” (Transcript-Story11-March 6, 2011). Olivia then posed another possible solution to the central question by saying “Or they can write a script letter to the boss” (Transcript-Story11-March 6, 2011). Ms. Hen asked her to clarify: “So Olivia, you say you would write a secret letter to the boss?” (Transcript-Story11-March 6, 2011). Her question was then answered by Michael who stated his solution. Michael drew conclusions about the other students’ opinions. Then Michael’s argument was extended by Emily, who provided a better way to tell the boss of the restaurant. In this discussion, all that Ms. Hen did was to pose the central question to the students, state the principles of the CR discussion format, and ask students to clarify what they meant if their statements were unclear. The students, on the other hand, were responsible for raising questions, changing the topics by making new arguments, and questioning each other’s statements.

In sum, the adoption of the CR discussion format in Ms. Hen’s class resulted several changes to the strategies that Ms. Hen utilized to lead discussions. First, when compared to the sessions before the CR discussion format was implemented, the utilization of IRF exchanges was significantly reduced due to the more open structure of exchanges. The change in participation structure provided more opportunities for students to take the floor and to interweave their voices with other discussants. The open structure also allowed for “emergent leadership” (Li, et al.,
2007) to occur in the discussions. It was found that in contrast to the non-CR sessions in which Ms. Hen led all of the discussions, leadership roles were shared between the students and the teacher. The sharing of leadership is perhaps best exemplified by the way the turn-taking rules were equally negotiated between Ms. Hen and her students. However, even during the CR sessions, Ms. Hen still exerted authority in taking the floor when it came to discussion of argumentative skills. Then, Ms. Hen would take the floor and lead the discussion, asking the students to reflect upon the strategies that they employed for stating their points or in responding to the arguments of others. The discussion of argument skills was never lead by the students even during the CR sessions.

4.3 Do the students’ reading behaviors and strategies change after the introduction of CR?

In this section, the results of analysis of students’ performance on the oral tasks are presented to reveal the changes in students’ reading behaviors and strategies. Twenty-six transcripts were analyzed in this section. Furthermore, each student was required to complete three oral tasks after non-CR sessions and three to four oral tasks after CR sessions. Due to time restrictions, only Emily and Larry completed four oral tasks during CR.

4.3.1 Accuracy rate, reading rate and retelling

Table 16 shows the percentage of words read correctly (accuracy rate) in oral task for each student, and Table 17 shows the students’ reading rates (wcpm). After CR was implemented, accuracy rate and reading rate steadily improved. However, it is notable that even during non-CR sessions the accuracy rate was increasing. As a
result, it is hard to identify whether there is any relationship between the growth in accuracy rate and the implementation of the CR discussion format.

**Table 16**  Percentage of words read correctly oral tasks for each student

<table>
<thead>
<tr>
<th>Student</th>
<th>Sessions</th>
<th>Emily</th>
<th>Michael</th>
<th>Larry</th>
<th>Olivia</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
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<td>non-CR sessions</td>
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<td></td>
<td>7</td>
<td>94.80</td>
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<td>98.06</td>
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</table>

**Table 17**  Reading rate (wcpm) in oral tasks for each student

<table>
<thead>
<tr>
<th>Students</th>
<th>Sessions</th>
<th>Emily</th>
<th>Michael</th>
<th>Larry</th>
<th>Olivia</th>
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<td>51.67</td>
<td>51.67</td>
<td>57.02</td>
</tr>
<tr>
<td></td>
<td>3</td>
<td>35.25</td>
<td>46.83</td>
<td>49.60</td>
<td>91.80</td>
</tr>
<tr>
<td>CR sessions</td>
<td>4</td>
<td>64.50</td>
<td>46.33</td>
<td>54.00</td>
<td>108.45</td>
</tr>
<tr>
<td></td>
<td>5</td>
<td>95.20</td>
<td>48.67</td>
<td>60.00</td>
<td>123.48</td>
</tr>
<tr>
<td></td>
<td>6</td>
<td>75.78</td>
<td>79.67</td>
<td>57.17</td>
<td>125.13</td>
</tr>
<tr>
<td></td>
<td>7</td>
<td>60.00</td>
<td></td>
<td>83.50</td>
<td></td>
</tr>
</tbody>
</table>
As for students’ retelling of the stories, two types of data are presented. The first is the percentage of points that students earned in each retelling task. Table 18 and 20 are the percentage of idea units in each student’s recall and retelling task. On both metrics, students’ retellings improved after the CR discussion format was introduced.

Table 18  Percentage of points that students earned in retelling stories during each oral task

<table>
<thead>
<tr>
<th>Sessions</th>
<th>Emily</th>
<th>Michael</th>
<th>Larry</th>
<th>Olivia</th>
</tr>
</thead>
<tbody>
<tr>
<td>Non-CR sessions 1</td>
<td>76.66</td>
<td>53.06</td>
<td>63.30</td>
<td>53.06</td>
</tr>
<tr>
<td>2</td>
<td>81.80</td>
<td>68.42</td>
<td>77.70</td>
<td>67.60</td>
</tr>
<tr>
<td>3</td>
<td>82.90</td>
<td>82.35</td>
<td>53.90</td>
<td>79.40</td>
</tr>
<tr>
<td>CR sessions 4</td>
<td>87.80</td>
<td>100.00</td>
<td>87.80</td>
<td>84.40</td>
</tr>
<tr>
<td>5</td>
<td>92.00</td>
<td>93.33</td>
<td>77.70</td>
<td>84.38</td>
</tr>
<tr>
<td>6</td>
<td>100.00</td>
<td>100.00</td>
<td>90.00</td>
<td>100.00</td>
</tr>
<tr>
<td>7</td>
<td>100.00</td>
<td>100.00</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Table 19  Percentage of idea units recalled in students’ retelling tasks

<table>
<thead>
<tr>
<th>Sessions</th>
<th>Emily</th>
<th>Michael</th>
<th>Larry</th>
<th>Olivia</th>
</tr>
</thead>
<tbody>
<tr>
<td>Non-CR sessions 1</td>
<td>76.40</td>
<td>60.00</td>
<td>61.10</td>
<td>60.00</td>
</tr>
<tr>
<td>2</td>
<td>77.50</td>
<td>55.00</td>
<td>83.80</td>
<td>62.50</td>
</tr>
<tr>
<td>3</td>
<td>75.00</td>
<td>88.10</td>
<td>50.00</td>
<td>77.70</td>
</tr>
<tr>
<td>CR sessions 4</td>
<td>92.00</td>
<td>100.00</td>
<td>88.80</td>
<td>81.80</td>
</tr>
<tr>
<td>5</td>
<td>90.00</td>
<td>90.90</td>
<td>72.70</td>
<td>81.80</td>
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<tr>
<td>6</td>
<td>100.00</td>
<td>100.00</td>
<td>90.90</td>
<td>100.00</td>
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<tr>
<td>7</td>
<td>100.00</td>
<td>100.00</td>
<td></td>
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</tr>
</tbody>
</table>

In summary, the results for accuracy rate, reading rate and recall show that
students’ performance in reading steadily improved after CR was introduced. However, it must be said that it is hard to identify whether the improvement in students’ performance can be attributed to the introduction of CR.
4.3.2 Reading strategies

In this section, I present the frequency of each student’s use of reading strategies in non-CR and CR sessions. Descriptions of the trends in reading strategies are also provided. Due to individual differences in reading strategies, I present the trend for each student rather than calculate an overall average across all of them.

Figure 4.15  Mean frequencies in using reading strategies in Emily’s oral tasks

Figure 4.15 presents the mean frequencies of Emily’s reading strategies. In the non-CR sessions, the mean frequency in using decoding strategies, such as
consulting the handouts to find out the Pinyin of characters and scanning for unfamiliar words, is higher than the mean frequencies in using literal, inferential, and metacognitive strategies. In CR sessions, the mean frequency in using decoding strategies reduced. In contrast, the mean frequency in using metacognitive strategies such as using background knowledge to solve problems, rereading, adjusting reading speed, using repair strategies when comprehension failed and reporting difficulties to the researcher increased. My observation indicates that before the CR discussion format was implemented, Emily relied heavily on the use of handout for each lesson as a textual resource to find out the Pinyin of each character when performing the read-aloud tasks. After the CR was introduced, Emily reduced her use of the Pinyin tool and instead increased the use of her background knowledge of lexical and syntactic knowledge in solving reading problems. The frequency of using strategies such as rereading, adjusting reading speed, and using repair strategies also increased. However, as fewer reading difficulties occurred in the last think-aloud tasks, fewer reading strategies were observed toward the end of the CR sessions.
Figure 4.16 presents the mean frequencies of Larry’s reading strategies. In the non-CR sessions, the mean frequency in using decoding strategies, such as consulting the handouts to find out the Pinyin of characters is higher than the mean frequencies in using literal, inferential, and metacognitive strategies. In CR sessions, the mean frequency in using decoding strategies reduced and the mean frequency in using inferential comprehension strategies, such as previewing and hypothesizing, increased. My observation indicates that before the implementation of the CR discussion format, Larry also relied heavily on the handout as a textual resource to look for Pinyins, and sometimes, the syntactic clues in texts when he was doing the
read-aloud tasks. After CR was introduced, Larry reduced his reliance on the handouts and increased the use of inferential comprehension strategies to solve reading problems. He skimmed the text before he read it and made guesses to the unknown words. However, there was no change in his use of metacognitive strategies when CR was introduced.

Figure 4.17 Mean frequencies in using reading strategy in Michael’s oral tasks

Figure 4.17 presents the mean frequencies of Michael’s reading strategies. In non-CR sessions, the mean frequency in using decoding strategies in non-CR sessions, such as using radical knowledge to identify unknown words and using handout to find out the Pinyin of characters, is higher than the frequencies in CR
sessions. The mean frequency in using inferential comprehension strategies in non-CR sessions, such as previewing, using text structure to identify the main idea of the text, predicting and hypothesizing, is lower than the frequency in CR sessions. The mean frequency of metacognitive strategies in non-CR sessions, such as rereading and adjusting reading speed, is lower than the frequency in CR sessions. However, the difference in using higher level reading strategies in non-CR sessions and CR sessions is not prominent. My observation indicates that Michael only used the handout as a tool for word recognition in doing his first think-aloud protocols, because he was reluctant to rely on the handout when he was doing the think-aloud tasks. Before the implementation of the CR format, he mostly relied upon his syntactic knowledge and strategies of rereading in addressing his reading difficulties. After the introduction of CR, Michael started to use his knowledge of radicals of Chinese characters, and lexical and syntactic information to guess unknown words. Michael seldom reported his reading difficulties when he was doing think-aloud protocols
Figure 4.18 presents the mean frequencies of Olivia’s reading strategies. The mean frequencies in using decoding strategies and literal comprehension strategies in non-CR sessions are higher than the frequencies in CR sessions. The mean frequencies in using inferential strategies and metacognitive strategies in non-CR sessions are lower than the frequencies in CR sessions. My observation indicates that before CR was introduced, Olivia also relied on the handout as a textual resource to look for Pinyin of the characters. She also used other decoding strategies, such as lexical and syntactic knowledge, to solve problems. The use of decoding strategies decreased after CR was introduced. Furthermore, in CR sessions, Olivia increased her use of inferential strategies, such as paraphrasing what she found when she experienced reading difficulties, previewing and drawing inferences from the
classroom discussion to help her to comprehend the meanings of the words. The use of metacognitive strategies, such as rereading, and adjusting her reading speed, and making inferences from her background knowledge also increased after CR was introduced.

In sum, the results from the analysis of students’ reading strategies indicate that, after the introduction of CR, the students reduced their reliance on the handout in their oral tasks and they used their knowledge of lexical and syntactic resources to solve their reading problems. Moreover, the students tended to reread the stories more often to help them grasp the meaning of the text. They also more often adjusted their reading speed and reported their reading difficulties to me when they encountered reading difficulties. The results for metacognitive strategies suggest that most students were monitoring their reading more often after CR was introduced. Olivia showed a large improvement in use of metacognitive reading strategies after CR was introduced, whereas Michael and Emily showed smaller improvements. Larry showed no change in the use of metacognitive strategies before and after the introduction of CR.

Taken together, the findings from analysis of students’ reading behaviors and strategies indicate that CR made little differences in promoting students’ reading accuracy and reading rate, or even in the retelling of the stories. However, most students’ use of metacognitive strategies improved, albeit to varying extents, after the introduction of CR.
4.4 Do the students’ skills in argumentation change after the introduction of CR?

The transcripts of students’ responses to the argumentation task were analyzed based on the coding scheme used by Reznitskaya et al. (2001) to examine the changes in students’ argumentation skills after CR was introduced. Each transcript was divided into idea units and each idea unit was categorized into five subcategories: position, argument, counter-argument, rebuttal and repeat. As mentioned previously, three oral tasks were implemented in non-CR sessions and four were implemented in CR sessions. Because of time constraints, Emily and Larry completed seven oral tasks but Olivia and Michael completed only six oral tasks.

![Image of bar chart showing mean percentage of idea units in each category of argumentation in non-CR and CR sessions]

*Figure 4.19 Mean Percentage of Idea Units in Each Category of Argumentation in Non-CR and CR Sessions*
Figure 4.19 shows the mean percentage of idea units in each category of argumentation before and after CR was introduced. The percentage of idea units in the Argument category increased from 39.83% (SD=0.06) in non-CR tasks to 43.24%, (SD=0.06) in the CR tasks, and the percentage of idea units in the Counter Argument category increased from zero in non-CR tasks to 13.40% (SD=0.06) in CR tasks. However, the percentage of idea units in the Position category decreased slightly from 15.79% (SD=0.03) in non-CR tasks to 14.42% (SD=0.04) in CR tasks, and the percentage of idea units in the Repeat category decreased sharply from 44.38% (SD=0.09) in non-CR tasks to 23.95% (SD=0.08) in CR tasks. Moreover, there were no rebuttals found among seven student argumentation tasks. These results suggest that, CR may have facilitated students’ use of arguments and counter arguments, and reduced the repetition of ideas. It should be noted that no student incorporated counter arguments in their arguments before CR was introduced, but counter arguments were used after CR was introduced. Through classroom observation, I noticed that students incorporated counter arguments (ideas from the opposite side) to strengthen their own statements when they expressed their positions in the oral tasks.

An excerpt from Emily’s oral tasks is presented as follows. This oral task was completed after the discussion of Story 11. In Story 11, the main character, Xiao Mei, was working in a fast food restaurant and she found that the manager did not wash his hands after he went to the bathroom. Xiao Mei was wondering whether she should ignore what the manager was doing or whether she should report her observations to her boss. After reading the story, I asked Emily to do oral tasks for
this story. In the discussion of Story 11, Emily chose not to tell the boss about the manager’s behavior because she thought that Xiao Mei should protect herself from the possible revenge that the manager might take on her. However, her statement was challenged by other students who thought that as a worker, Xiao Mei should try to protect the customers and let the boss know the manager broke the rules of sanitation or at least, talk to the manager about this. After the discussion, Emily restated her choice in the argumentation task. However, Emily incorporated the opposing points of view in her solution to the question.

In the beginning, Emily stated that she would not tell the manager if she were Xiao Mei. She listed her reasons for her choices as follows:

Honestly, I, since I’m a worker, I’m not on his or her level to (do) manager and when you’re manager, you have the power to fire people. But also since he or she is a manager, the boss must trust him or her so much because being a manager is a pretty good job. And you can’t just fire someone for thinking that you get to wash your hand. So that’s why the manager might find opportunities, like picking on her like you go to do this. So I don’t want to be like got person like I already have school and stuff and earn the money so I don’t want to be like the manager picking on me twenty-four seven try to find the way to fire me. (Oral Task-Argumentation-Story 11-Emily)

However, she later stated that she would try to talk to the manager about this to see if she could correct his behavior. If her warning did not work, she would just go back to her own work and let it go.

I mean, it’s gonna to be hard to say so, like the manager, so. Or like if I couldn’t say anything about it…. So I don’t want to risk myself, cause if I have school and the university cost a lot and of course you need job and money to pay for it. So I probably just like, speak with him or her but I can’t sit back and do anything without that. So I might speak to the manager or write a letter. And if
nothing happens, I’m going to do my work, try to get myself not to get fired. (Oral Task-Argumentation-Story 11-Emily)

Another example is from Larry’s argumentation task after the discussion of Story 14. The central question of Story 14 asked the students to make the choice of whether or not to abandon their pet by sending it to a shelter because of the family’s severe financial problems. In the discussion, Larry said he would send the pet to the shelter. However, the students on the opposing side said that they would find ways to keep the pet, including making the pet an outdoor shelter near their house or finding another apartment that allowed pets. Later in the argumentation task, Larry restated his choice of sending the pet to the shelter. However, before he sent it to the shelter, he would try his best to keep the dog, including finding an apartment that accepted pets.

I wouldn’t. I mean, before I do that I would find ways to, I will keep trying to find if there is apartment allow the dog. And again we have the family problem, we wouldn’t have the money to take care of the dog that the food or stuff like that. So if I probably wouldn’t find an apartment or find someone to take care of it while we try to get the money back. So in this situation that would be hard, but things like, it just, the easiest way is to put the dog in the pond. (Oral Task-Argumentation-Story 14-Larry)

In sum, the findings from the analysis of students’ the argumentative skills indicate that, after the introduction of the CR discussion format, the students learned to incorporate ideas that were raised by the opposing side in order to strengthen their own statements. This finding can clearly be attributed to the introduction of the CR discussion format.
4.5 Summary of results

The following is a summary of the main findings of this study. Each of my original research questions is considered in turn.

**Question 1**  *How do the patterns of classroom discourse in Chinese heritage language classrooms change after the introduction of Collaborative Reasoning?*

The findings indicate that the participation structure and patterns of discourses in CR discussions were different from those in non-CR discussions. The participation structure and discursive patterns in CR discussions provided more opportunities for students’ voices to be heard, responded to, and extended. The change in participation structure and discursive patterns also show whose knowledge is valued in the exchange of ideas. In this study, the results of the discourse analysis show that:

1. When compared to the students in non-CR sessions, the students in CR sessions were able to make longer contributions when they were given the opportunity to articulate their understanding or ideas.

2. The mean number of communication units in students’ talk and the mean number of turns that students took were substantially higher than that of Ms. Hen in the CR sessions.

3. Leadership was more evenly distributed to each discussant in the CR sessions than the in non-CR sessions, where the teacher was the principal leader.

4. In the CR sessions, the frequency of IRF (Initiate-Response-Feedback) exchanges decreased and a more open structure was used than in the non-CR sessions.

The participation structure in the CR sessions allowed students to have greater
power to bring their own voices to public discussion. The students’ voices also share the same status with the teacher’s voice in the CR sessions. Students had more authority to choose the topics and choose the audience in the CR sessions than in the non-CR sessions.

The results of analyses using the coding schemes of Soter et al. (2008) and Marshall et al. (1995) suggest that the quality of classroom discussions increased after the introduction of CR. First, more discursive features that index high-level thinking were found in the CR discussions than in the non-CR discussions. The features included exploratory talk, uptake, authentic questions, high-level-thinking questions, affective questions, and elaborated explanation. Second, the introduction of the CR approach prompted the students to use multiple knowledge sources, and multiple kinds of reasoning. On the one hand, in non-CR sessions, the students were mainly concerned about the information sources from the text or the contextual knowledge about the text provided by Ms. Hen. However, in CR sessions, they started to use general knowledge, knowledge from previous discussions/readings, and knowledge that they brought from their own experiences to support their arguments, to make hypotheses, or to question each other. As for Ms. Hen, her main knowledge sources in CR sessions were the students’ previous remarks in the discussion. On the other hand, the kind of reasoning that the students performed in the non-CR sessions were mostly “summary-description” and “interpretation.” However, in CR sessions, the incidence of “generalization” and “evaluation” increased. The students started to reveal their aesthetic judgment about the story and their emotional attachment to the text. And, they learned to incorporate information
from previous discussions into their discussions to strengthen their arguments. They also spent more time describing, summarizing and interpreting the information from the story as they did in non-CR sessions.

Results from these two analyses indicate that the discourse that occurred in the CR sessions corresponded to “dialogic discourse” (Nystrand, 1991, 1997): The floor was equally open to each speaker so that the discussants could actively participate in the creation of reasoning. Furthermore, the increase in uptake and the incorporation of previous discussions/readings in statements and questions imply a strong linkage between the students’ utterances. The improvement in the quality of the discussion can also be supported by the high frequency of exploratory talk, which is an important criterion for determining the extent to which the discussants were involved in the process of knowledge construction.

The findings also indicate that the students asked questions that involved uptake (see Table 12) and made statements of evaluation (see Figure 4.7) even before CR was introduced. The high rate of uptake in non-CR sessions was possibly a result of the increased opportunity for discussion. Because discussion is an instructional approach that enables participants to freely converse with one another, the students actively responded to one another’s talk in both non-CR and CR discussions. The high rate of evaluation statements in non-CR and CR sessions might reflect the impact of the text. In non-CR and CR sessions, the stories were written in same format—short stories with a central question. In the non-CR sessions, the central question may have encouraged the students to express their thoughts even though they were not told to do so.
However, it should be noted that, although the students already asked questions that involved uptake and made evaluation statements in the non-CR sessions, the implementation of CR was associated with an increased tendency to do so. As shown earlier. There was an increase in uptake (see Table 12) and in evaluation statements (see Figure 4.7) after CR was introduced.

**Question 2**  How does the teacher’s participation change after the introduction of Collaborative Reasoning?

The discourse analysis revealed a change in the teacher’s discussion strategies. In non-CR sessions, the teaching strategies that Ms. Hen used were mainly modeling how to share her experience, asking students to find information from the text, asking students to brainstorm to find possible solutions for the central questions and using mini lessons to help students with difficult phrases, key words and sentences. However, in CR discussions, Ms. Hen reduced the amount of explanation of the key words or phrases and her sharing of her own experiences. Instead, she increased the number of questions in which she asked the students to clarify, and explain their remarks. She also summarized their findings to elicit more comprehensive responses from the students. She modeled how to compare and contrast different perspectives while making decisions about how to link different ideas or sustain on-topic discussion. Ms. Hen also engaged the students in the discussion of “metatalk” (Almasi, O’Flavahan & Arya, 2001) to promote the students’ argumentative skills. In the CR sessions, Ms. Hen’s utterances were highly responsive to the students’ remarks.

The most prominent quality that Ms. Hen brought to the discussions during the
CR sessions was the space she provided for the students to speak and the scaffolding activities she provided. In the non-CR sessions, Ms. Hen tended to use IRF (Initiate-Response-Feedback) exchanges to control the flow of conversation and claim her authority over turn-taking. However, in CR sessions, Ms. Hen relinquished her power over turn-taking and helped the students to select their topics and elaborate on their statements.

In the CR sessions, Ms. Hen also involved the students in accountable talk (Wolf, Crosson, & Resnick, 2005). She chose to “step out” of the discussions while the students were engaged in text-related discussions unless she felt the need to assist them in developing their argumentation techniques. Furthermore, she also used different scaffolding activities in non-CR sessions and in CR sessions. In the non-CR sessions, Ms. Hen mainly focused on the students’ abilities to decode the text and to make sentences. Sometimes she also provided supplementary background knowledge for students to assist them in comprehending the text. However, in the CR sessions she placed emphasis on higher-level thinking skills such as weighing questions from different perspectives, integrating the information from each discussant, asking students to strengthen their logic in presenting an argument and clarifying the relationships between topics.

The discourse analysis showed that Ms. Hen’s skills of facilitating the discussions, such as eliciting more responses from other discussants by adopting the previous remarks in her own discourse, were learned by the students. They used these skills when they students performed a leadership role in the discussion.
**Question 3**  *Do the students’ reading behaviors and strategies change after the introduction of Collaborative Reasoning?*

Results of the data analysis indicate that no difference exists in the reading speed, accuracy rate and retelling tasks in non-CR and CR sessions. However, the results from the students’ reading strategies indicate that the students gradually reduce their dependence on pinyin tools after the implementation of CR. The students were also found to draw inferences from their background knowledge of lexical, syntactic and knowledge of Chinese characters in solving problems. Moreover, compared to the students’ reading performance in non-CR sessions, in CR sessions the students are more aware of their reading difficulties and try to solve the problems by using repair strategies, such as using fingers to point to the text while reading aloud or asking questions, or clearly stating their difficulties in word recognition, sentence structure or their confusions in finding textual resources. They were also found to adjust their reading speed and re-read the text when they encounter unfamiliar words or sentences.

**Question 4**  *Do the students’ argumentation skills change after the introduction of Collaborative Reasoning?*

Findings indicate that after the introduction of CR, the students incorporated counter arguments into their statements. This result indicates that the students learned to carefully evaluate the pros, cons, and possible solutions regarding the central question before they made a decision.
Chapter 5

Discussions and Conclusions

The goal of this study was to explore the effects of introducing CR in a Chinese heritage class on the quality of classroom discourse in discussions of Chinese stories. The study also sought to examine the effects of CR on students’ reading processes and strategies. In the following sections, I summarize the findings and discuss how the results of the study relate to those of prior studies and how the my findings are consistent with the constructs of neo-Vygotskian theories and the notion of dialogism. I also discuss the implications of the findings for pedagogical practices in Chinese community schools. I provide suggestions for future studies of teaching Chinese heritage language learners and of the relationship between classroom discourse and development of students’ reading comprehension. Finally, I state the limitations of my study as well as suggestions for further research.

5.1 Summary of Findings

The findings indicate that the introduction of CR changed the nature of the participation structure of the discussions from a teacher-led discussion to a more peer-led discussion. It was found that, after the introduction of CR, the incidence of the IRF (Initiate-Response-Feedback) discourse pattern decreased and a more open structure was used, in comparison to the non-CR discussions. Students had more authority for choosing the topics and more control over turn-taking in the CR
sessions, as compared to the non-CR sessions. They also talked more than the teacher did in CR sessions, as compared to the non-CR sessions.

This study also revealed that CR provided a context for the students to engage in high-quality discussions. Analysis of the discourse of the discussions indicated that students used more discursive features that indexed high-level thinking; their discourse showed a higher incidence of exploratory talk, uptake, authentic questions, high-level-thinking questions, affective response questions, and elaborated explanations. The students’ discourse also evidenced multiple knowledge sources, such as self experience, general knowledge, and knowledge from previous reading/lecture/discussion to support their arguments, and multiple kinds of reasoning, such as evaluation and generalization, to support their arguments in CR sessions as compared to non-CR sessions.

The findings also indicated that the teacher used different discussion strategies in non-CR and CR sessions. In the non-CR sessions, the teacher spent a lot of time sharing her experiences with the students and using mini-lessons to familiarize students with the key words or phrases in the text. However, in the CR sessions, the teacher reduced her use of direct statements and increased her use of questions to prompt students to clarify and elaborate their opinions. In the CR sessions, the teacher more frequently summarized what students said to elicit their responses, and she emphasized higher-level thinking skills such as making references, weighing issues from different perspectives, integrating the information, asking students to strengthen their logic in presenting an argument and clarifying the relationships among topics.
The results were mixed regarding the improvement in students’ reading processes and strategies after the introduction of CR. Results indicated that there were no differences in students’ reading speed, accuracy, or retellings between non-CR and CR sessions. However, results showed that the students reduced their dependence on Pinyin tools after the implementation of CR, and that they used more lexical, syntactic knowledge of Chinese characters to solve problems. They also used more repair strategies when they encountered reading difficulties after the introduction of CR. The students also more often incorporated counter arguments into their statements after CR was introduced.

5.2 Connections to Theory and Prior Research

In this section, I first relate my results to notions of neo-Vygotskian theory and dialogism and the construct of exploratory talk from Mercer (1996). I then discuss how my findings contribute to research on teaching and learning Chinese in Chinese community schools, and to research on using CR in the cultural context of East Asian countries. I then contextualized my study in terms of other studies that implemented CR discussions in the contexts of a second language classroom.

In this study, an important finding was the way in which CR altered the participation structure of the classroom discussions and encouraged students to use discursive features that index high-level thinking skills. The introduction of CR also improved the frequency of exploratory talk in the discussions. The increase in the incidence of exploratory talk indicated that the students were more likely to invite other students to elaborate, question, or rebut their ideas, and that students adopted new social norms when they were involved in the discussions. The new social norm

Students cooperated with each other to analyze different points of view and advanced arguments that were supported by evidence.

Studies of CR have used the notions of internalization and scaffolding to explain the effects of CR (e.g. Anderson et al., 2001; Chinn, Anderson & Waggoner, 2001, Vygotsky, 1978). Anderson et al. (2001) argued that CR discussions scaffold students to internalize the reasoning and rhetorical strategies that emerged from the discussions to form their individual arguments. Furthermore, Anderson et al. argued that the reasoning process that occurred in CR discussions is dialogical in nature (Anderson et al., 2001; Bakhtin, 1981, 1986; Wretch, 1991). The findings of my study are consistent with these explanations for the effects of CR in two respects. First, in my study, the CR discussion scaffolded the students to use the argumentative strategies that facilitated the discussions. Second, the findings of my study suggest that the open participation structure, the use of authentic questions, and the teacher’s strategic moves in CR sessions contributed to the students’ dialogue by enabling more space for different voices. As a result, multiple voices were heard and valued in the discussions (cf. Bakhtin, 1981). It can be argued that giving space to students enabled different voices to refract with one another and generated new interpretations of the texts (cf. Bakhtin, 1981). The findings of the study also suggest that the students treated the text as one of the voices in the chain of ideas (cf. Nystrand, 1997).

The results also showed that students engaged in exploratory talk in the CR discussions. Exploratory talk is premised on Vygotsky’s (1962) notion that language
is a tool for thinking. Mercer (1996) argued that when students engage in exploratory talk, they use their language as a thinking device to collaboratively solve problems. The results of the study indicate that the CR discussions created conditions in which the students used language to solve problems and to reason together. Language, in this situation, was not only a tool of social communication, but also a tool to engage in inter-mental tasks. The students used language to construct knowledge about the text, explore extended explanations to the questions, and seek comprehensive solutions to the issues under discussion. To make convincing arguments, students used their own experience as supporting evidence for their arguments during classroom discussions.

Mercer (1999) also noted that exploratory talk is fostered by culturally appropriate norms in which the students use the language in “an educated way” (p.98). He stated that, according to Vygotsky’s (1978) theory, individual cognitive development is shaped by social and cultural experience. Mercer argued that the culturally appropriate norms of negotiation that students acquire in exploratory talk serve to promote their individual cognitive development. In this study, it was found that the students appropriated discursive patterns to facilitate the free exchange of ideas and extended interpretations of stories. Findings from the study suggest that the students appropriated (cf. Leont’ev, 1981) discourse patterns that facilitated mutual respect of one another when they participated in the CR discussions. When someone was talking, other discussants would listen, wait for longer periods of time for the speaker to elaborate on his or her ideas, and make reasoned responses to the speaker’s remark. All discussants had equal status and they reconciled their different
perspectives by negotiating with one another rather than being guided by one person’s authoritative leadership (such as that of the teacher). However, the evidence was less convincing as to whether, as Mercer would argue, the talk lead to improvement of students’ individual cognitive processes.

The high rates of uptake and elaborated explanation in student’s talk provide additional evidence of exploratory talk in the CR discussion. These aspects of discourse indicate that the students tended to repeat and reformulate others’ talk in their own statements. Mercer (1994) stated that the repetition of other’s talk is one of the ways in which students appropriate other students’ ideas.

The findings of my study address some of the weaknesses of Chinese heritage education identified in previous studies (Curdt-Christian, 2006; Kondo-Brown, 2008; Wang, 1995, 2004; Zhang & Davis, 2008). First, my study responds to the call for enhancing the teachers’ expertise in developing student-centered instructional strategies and suitable teaching materials for heritage students (Wang 1995, 2004; Weger-Guntharp, 2008; Zhang & Davis, 2008). In my study, Ms. Hen and I wrote a series of Chinese stories for our story discussions based on the students’ language needs and their social experience. The stories we wrote prompted the students to share their personal life experiences during the discussions and appeared to improve students’ engagement in the CR discussions. Moreover, the story discussions also helped Ms. Hen to use more student-centered instructional strategies to encourage the participation of the heritage language students. The findings indicate that one way to help the teacher engage heritage students in discussion is to develop the strategies and materials based on the language and social needs of his or her students.
Second, my study demonstrates pedagogy for altering the discourse structure in the classrooms of Chinese community schools. Previous studies on classroom discourse patterns in Chinese community schools indicated that the dominance of teacher-authoritative discourses contributed to unequal power relationship between the teacher and the students. The teacher-authoritative discourse also contributed to the mismatch in the cultural values and social norms in the public schools and Chinese community schools (Curdt-Christian, 2006; He 2001; Jia, 2009). The studies of classroom discourse in Chinese community schools indicated that the authoritative discourse in the classrooms of Chinese community schools could be attributed to the learning experiences of the Chinese teachers in their home countries (Curdt-Christian, 2006; He 2001; Jia, 2009). To alter the unequal power relationship in the classroom, Curdt-Christian (2006) argued for the need for dialogically organized instruction in the classrooms of Chinese community schools. She proposed that open discussions should be used in the Chinese community schools to encourage students to produce their own “innerly persuasive discourse” (cf. Bakhtin, 1984). In my study, the implementation of CR changed the discourse in the classroom and encouraged more students to be involved in creating the public discourse. The introduction of CR not only changed the participation structure in the classroom but also altered the power relationship between Ms. Hen and her students. The introduction of CR prompted the teacher to reflect on the impact that cultural values have in shaping classroom discourse. The teacher also noticed that the changes in discursive patterns and participation structures made a difference to the students’ learning strategies and their roles in the discussions. After the introduction
of CR, she allowed the students to negotiate the turn-taking rules with her and allowed the students to challenge her authority when they interpreted the text. The findings of the study indicate that CR approach is effective in altering the pedagogical affordances of classroom discussion and has the potential to promote “innerly persuasive discourse” (Bakhtin, 1984, see also Curt- Christian, 2006) in a Chinese community school.

Third, my study explored how a Chinese teacher perceived CR and incorporated CR in her instructional practice. Previous studies of CR have provided detailed descriptions of the steps involved in training teachers for CR discussions but they have rarely discussed how the teachers perceived CR (e.g. Anderson, 1998; Anderson, et al., 2001; Chinn, Anderson & Waggoner, 2001; Kim, Anderson, Nguyen-Jahiel & Archodidou, 2007; Li et al., 2007; Nguyen-Jahiel, Anderson, Waggoner & Rowell, 2007; Reznitskaya, 2007). There appears to be only one study that described the experience of a teacher and the challenges she encountered when using CR in her classroom (Nguyen-Jahiel, Anderson, Waggoner & Rowell, 2007). In my study, I illustrated the challenges that Ms. Hen faced when she adopted CR in her Chinese heritage language class. My study also described how Ms. Hen’s participation helped the students become accustomed to the CR discussion format. I argue that my description of the process that Ms. Hen went through in the transition from her usual discursive patterns to the CR discussion format is valuable because it mirrors, in many respects, the dilemma that most Chinese teachers face when they adopt student-centered instructional strategies in teaching Chinese heritage language students.
The findings of my study contribute to investigation of the effects of CR in second language learning contexts. There are few studies of the use of CR with second language students (e.g., Kidder, 2008; Zhang, 2009) and my study is the only one that used CR to teach heritage language learners. Kidder (2008) examined the effect of CR in promoting the speaking skills and literary response of students in a French class. Kidder found that CR was a viable means to help bridge the gap between the language and content of second language instruction. She also found that when students participated in CR discussions, they used French, their target language, to extend their discourses of the text and to engage in authentic communication with one another (Kidder, 2008). Zhang (2009) conducted a quasi-experimental study to examine the effect of CR in promoting the development of oral and written English of Spanish-speaking English language learners. The findings indicated that students in the CR discussion condition made longer arguments in oral and written tasks than the students in non-CR condition did. She also found that CR promoted the students’ reading comprehension and listening ability in English. The findings of my study are somewhat consistent with the findings of Kidder (2008) and Zhang (2009) concerning the effect of CR in fostering second language acquisition. Moreover, my study shows that CR enhances the use of metacognitive reading strategies in reading of target languages. However, in my study, no evidence was found that CR discussions prompted the students to use the target language (i.e., Chinese) to construct oral discourse in their classroom discussions. The most likely explanation for this is that, in my study, the students were allowed to use English in the CR discussions if they had difficulty using
Chinese. Hence, the students more often used English rather than Chinese to communicate with their peers during the discussions.

5.3 Implications

This study has implications for pedagogical practices in the Chinese heritage language classroom. For Chinese heritage language learners, CR provides a means of involving them in high-quality discussions about Chinese stories. Furthermore, CR appears to offer a means of fostering students’ use of metacognitive strategies when reading Chinese stories. For teachers, CR provides a means of changing a teacher-centered participation structure to a more student-centered one in classroom discussions. Nevertheless, when implementing CR, the teacher needs to consider the particular context of the Chinese heritage language classroom. To successfully implement CR in the classroom, the teacher needs to be allowed to adapt the discussion approach to fit the unique circumstances of the class and the need of the students. Furthermore, the teacher needs to recognize that CR is not merely an instructional strategy but a framework for changing the classroom culture so all members’ perspectives and contributions are acknowledged and respected.

The present study also suggests that the theoretical lenses of socio-cultural theory and dialogism are useful in interpreting the results concerning the effects of CR. Among these theories, I found that the notion of voices and space were useful to explain how the teacher used CR to make room for the contributions of different voices. The notions of the language as tool for thinking, scaffolding and appropriation in sociocultural theory were also useful in explaining how CR discussions supported and enabled high-quality discussions.
5.4 Limitations

This study used a two-phase A-B single subject experimental design that is subject to a number of threats to internal validity (Neuman & McCormick, 1995). To overcome these limitations, several steps were taken to minimize the threats and ensure the quality of the research.

My first step was to establish a baseline data using five pre-intervention (non-CR) sessions to obtain a stable estimate of the teacher and students’ behaviors before the intervention (cf. Neuman & McCormick, 1995). To collect the data, I used repeated measurements in the initial phase of the study to claim that changes in the intervention phase were due mostly to the impact of the intervention (Neuman & McCormick, 1995). For example, in my analysis of the discourse (see section 4.1.1), I found that the number of communication units contributed by Ms. Hen and her students appeared to be stable after session 3, 4, and 5 (see Figures 4.1, 4.2, and 4.3). Therefore, it is likely that the change in the numbers of Ms. Hen and her students’ communication units in the classroom discussions from session 6 to 13 were caused by the implementation of CR.

My second step to reduce the threat to internal validity was to ensure the integrity of each CR session. To achieve this, a CR teacher training session with Ms. Hen was conducted to ensure that she had the knowledge and skills necessary for leading the CR discussions. After the teacher training, the students also received a training session in how to have a successful CR discussion. Moreover, I monitored each CR sessions and discussed the concerns that Ms. Hen raised after leading CR discussions. These post-session conversations with Ms. Hen ensured that CR
discussions were appropriately implemented.

In addition to the above research actions, I used multiple data sources such as transcripts of classroom discussion, oral tasks, teacher interviews, and my field notes. These data sources enabled research triangulation in this study. Moreover, my prolonged involvement in the research site also strengthened the trustworthiness and authenticity of the data obtained from the study.

Because of the small class cohort used in this study, the generalizability to different populations or different settings is restricted. However, in terms of analytic generalization (cf. Yin, 2008), it should be noted that this study achieved similar results to those of Anderson et al. (2008) who implemented CR in classrooms in China and Korea. Anderson and his colleague examined the possibility of altering the teacher-authoritative discourse pattern which is influenced by the value systems of Confucianism. In the classroom contexts of China and Korea, there was little room for peer discussions because teachers were considered as omnipotent figures in the classroom, and their authority and monologic discourse could not be challenged. In the study, Anderson and his colleague taught the students to conduct CR discussions after their regular language classes. They found that the students who were educated by the teacher-authoritative discourse showed considerable potential using CR, and suggested that CR is applicable in classrooms of East Asian countries. My study also suggests that CR is applicable in Chinese community schools which also hold the value system of Confucianism and similar role expectations across teachers and pupils as in Chinese speaking countries.

5.5 Suggestions for Further Study
This study applied an A-B single-subject experimental design to improve on existing empirical studies of Chinese heritage language learners. Prior studies of instruction in Chinese heritage schools have employed in-depth, qualitative approaches. There are several potential directions for future research about demonstrating discussion approaches in educating students in the bi-lingual and bi-cultural educational context.

First, additional empirical studies are necessary to examine the discourse practices in Chinese community schools. Moreover, large-scale, well-designed quasi-experimental or experimental studies are needed to identify the causal relationship between modifying the discussion practices in Chinese heritage classes and changing the discourse patterns in the classrooms and furthering development of students’ thinking skills.

Second, more studies are needed to examine the effects of CR and other discussion approaches in fostering the instruction of native Chinese speakers and the instruction of second language learners generally. These studies need to examine further the effects of using various discussion approaches to replace the teacher-dominated participation structures in the classrooms of Chinese speaking countries. Moreover, further studies are needed to examine the effects of CR and other discussions approaches on students’ reading strategies in the context of second language classrooms.

In conclusion, the results of this study demonstrate the positive contribution that discussion can make in promoting the productive use of discourse in a Chinese heritage language learners’ classroom. Results of the study also suggest that CR, an
approach that requires an open participation structure, critical thinking, and
self-management (Anderson, Kim & Li, 2008), can be used to promote reading in the
bi-cultural and bi-lingual context of a Chinese heritage language learners’ classroom.
## Appendix A  Record Sheet for Prompt-Reading Protocol

**RECORD SHEET FOR PROMPT-READING PROTOCOL (revised from Clay, 2000)**

Name: _________________________________________ Date: ____________  
School: _________________________________________________________  
D. of B.: ____________  Age: _____ yrs  
Recorder: _________________________________________  

<table>
<thead>
<tr>
<th>Text titles</th>
<th>Errors</th>
<th>Error</th>
<th>Accuracy</th>
<th>Self-correction</th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Running Words</td>
<td>Ratio</td>
<td>Rate</td>
<td>Ratio</td>
<td></td>
</tr>
<tr>
<td>Easy</td>
<td>___________</td>
<td>__________</td>
<td>1: ______</td>
<td>______ %</td>
<td>1:</td>
</tr>
<tr>
<td>Instructional</td>
<td>___________</td>
<td>__________</td>
<td>1: ______</td>
<td>______ %</td>
<td>1:</td>
</tr>
<tr>
<td>Hard</td>
<td>___________</td>
<td>__________</td>
<td>1: ______</td>
<td>______ %</td>
<td>1:</td>
</tr>
</tbody>
</table>

### Analysis of Errors and Self-corrections

Information used or neglected — Meaning (M), Structure or Syntax (S), Visual (V)

**Easy**

___________________________________________________________________________________________

**Instructional**

___________________________________________________________________________________________

___________________________________________________________________________________________

**Hard**

___________________________________________________________________________________________

___________________________________________________________________________________________
Cross-checking on information (Note that this behavior changes over time)

<table>
<thead>
<tr>
<th>Text</th>
<th>E</th>
<th>SC</th>
</tr>
</thead>
<tbody>
<tr>
<td>造謠</td>
<td></td>
<td></td>
</tr>
<tr>
<td>小梅和莉莉是好朋友。莉莉長得又漂亮，成績又好，所以很多女生嫉妒她。</td>
<td></td>
<td></td>
</tr>
<tr>
<td>有一天，小梅聽到其他女生到處告訴別人莉莉曾經未婚懷孕。小梅聽了很生氣，要其他女生不要再說莉莉的壞話。其他女生不但不聽，還跟小梅說：「如果妳敢把這件事情告訴莉莉，我們就要妳好看！」</td>
<td></td>
<td></td>
</tr>
<tr>
<td>小梅很苦惱，不知道該不該把這件事情告訴莉莉。</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
Appendix B  Think-aloud Protocol

Procedure of think aloud protocols

Before start, the researcher will read aloud instruction on how to perform think-aloud protocols for the activities that were going to follow. The participants will be asked to perform four activities: the read-aloud, the prompt-reading (concurrent think-aloud protocols), the text-retelling (the retrospective think-aloud protocols) and self-explanation. The script of instruction of each activity will be as the following. The second paragraph of the script in the activity of prompt-reading is adopted from Camps (2003, p.208).

In this study, I am interested in what you are doing when you perform a reading task in a Chinese story. To find out, I am going to ask you use a story that I provided for you to complete three activities. The first activity is to read out loud each word of the story and tell me EVERYTHING you are thinking while you are doing this activity. The second activity is to tell me about the details of this story as much as you can remember. The third activity is to tell me your opinion about the question that I ask you. You are expected to read out loud clearly and loudly enough into the microphone. You will be audiotaped while you work on these activities. If you have any questions on what I want you to do, please ask me right now.

Activity I: Prompt-reading

In this activity, you are expected to read this story out loud. If you encounter difficulty on the any words or sentences, I need you to tell me how you solve the problems. You may consult your textbook or any other resources if you like. Do you see the blue marks in the end of each sentence? These blue marks are the signals that to ask you to stop reading and tell me whether or not you understand this sentence. If you have difficulties with some words or idioms, you need to tell me where are them and what you are going to do with them .There are also some read marks in the end of each parafigure. When you encounter the read mark, please stop and give me a statement about the main idea of this parafigure.

When you perform this activity, I don’t want you to try to plan out what you say or explain what you are saying to me. Just act if you were alone in the room speaking to yourself. What’s most important is that you keep talking and talk clearly and loudly to the microphone. If you are silent in any period of time, I will remind you to talk by asking you some questions (Camps, 2003, 208).

Activity II: Text Recall

(Activity after the prompt-reading, the researcher will take back the material prepared for the student before the text-retelling) Please try to tell me the details of the story as much as you remember.)
Activity III: Argument

Can you tell me your opinion about the question that I set for you? When you answer the question, I wish you can tell me WHY you think in this way and the EVIDENCE that you use to support your opinion.

The researchers may ask during think-aloud protocols if the students keep silent in any period of time during the think-aloud task. These questions are listed as follows.

Activity I: Prompt-reading
1. What are you thinking?
2. What are you doing?
3. Do you have difficulty on any words (or sentence)? Where?
4. Anything else?

Activity II: Recall
1. Who is the main character in this story? (TE question)
2. What happens after...... (TE question)
3. What is this story about? (TI question)
4. Please tell me more about the character... (TI question)
5. Anything else?

Activity III: Argument
1. What is your opinion about my question? (SI question)
2. Why you say that? (SI question)
3. Is there any evidence to support your opinion? (SI question)
4. Is your evidence from the story or from your personal experience? Please explain that. (SI question)
Appendix C  Interview Questions for Instructor

Sample of Interview Questions for Instructor
1. How long have you been teaching in the Chinese community school?
2. Why do you volunteer to teach at the Chinese community school?
3. Do the students differ from the students you taught before? In what way? Why?
4. Do you talk to them in the class or individually? How do you get on with them?
5. Can you describe your teaching style?
6. Can you tell me how you prepare the lesson plans before the class?
7. Do you have any goal or rationale in conducting the discussion about text in your class? If you have, what is your rationale?
8. What would you say about your students’ performance in your classroom discussions?
9. What would you say about your students’ overall reading ability?
10. What would you say about your students’ reading comprehension?
11. What would you say about your students’ engagement in your class?
12. How do you know if you have an effective discussion about the text with the students?
Appendix D  Sample Hierarchical Tree Structure of a Story
Appendix E  Transcript Conventions

Transcript Conventions
(Adapted from Du Bios, Schuetze-Coburn & Paolino, 1993; Soter et al., 2006)
Rules about turn: Show beginning and end of an utterance by marking with CAPS at the beginning and a period at the end of the utterance unless the utterance is interrupted. A complete utterance may or may not be a sentence. It may be a fragment in the form of a phrase (e.g., *The red hat*) or a subordinate clause (e.g., *Because he found it in the kitchen*). The beginning and end markers are useful to show that an utterance has indeed begun and ended and not been interrupted (Soter, et al., 2006, p.4).

Transcript Conventions

<table>
<thead>
<tr>
<th>Meaning</th>
<th>Notations</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. Unintelligible</td>
<td>X</td>
</tr>
<tr>
<td>2. Uncertain hearing</td>
<td>&lt;you’re kidding&gt;</td>
</tr>
<tr>
<td>3. Overlap</td>
<td>[]</td>
</tr>
<tr>
<td>4. Pause, timed</td>
<td>(1.0)</td>
</tr>
<tr>
<td>5. Pause, untimed</td>
<td>(.)</td>
</tr>
<tr>
<td>6. Sentence Start</td>
<td>Capital letter</td>
</tr>
<tr>
<td>7. Latching</td>
<td>=</td>
</tr>
<tr>
<td>8. Extension of the preceding vowel sound</td>
<td>:</td>
</tr>
<tr>
<td>9. Emphasis</td>
<td>Capital letter</td>
</tr>
<tr>
<td>10. Comments regarding speaking behaviors</td>
<td>(laugh)</td>
</tr>
</tbody>
</table>
Appendix F  Coding Scheme of Marshall et. al

The following excerpt illustrates the application of the coding scheme in Marshall et al. (1995). The transcript is taken from the discussion of Story 3. Each communication unit is identified by two codes at the end of the communication unit and each code has three levels of coding. The first code identifies the knowledge sources of the communication unit; the second code identifies the kinds of reasoning of the unit.

Ms. Hen: OK. So, now, if you're Weiwei, would you stay with your parents or go to aboard? (Question-Instructional focus-Text) (Question-Instructional focus-Evaluation)

Olivia: If she went to the French school, then she can make lot of money because she should be educated and she get ( (used)) to something, she'll have a job (Inform-Instructional focus-Text-in-context) (Inform-Instructional focus-Interpretation). But if her parents are sick, then, do they have money to make her to the school (Question-Instructional focus-Text-in-context) (Question-Instructional focus-Summary-description)?

Ms. Hen: I think it's both possible. (Inform-Instructional focus- Text-in-context) ( Inform-Instructional focus-Interpretation)

Michael: She need scholarship (Inform-Instructional focus-Text) (Inform-Instructional focus-Interpretation)

Ms. Hen: OK (Response-Acknowledgement)

Oliva: And she'll be proud if she got it (Inform-Instructional focus-Text) ( Inform-Instructional focus-Interpretation).

Ms. Hen: then (Response-Request for elaboration)?

Larry: Oh, ok, well, I would, if I was her, I would go to France and pay someone to take care of them (Inform-Instructional focus- Text) ( Inform-Instructional focus-Interpretation). [So like three month] end of the year= (Response-Elaboration upon a previous remark)

Emily: [like to pay?] (Response-Request for elaboration)

Larry: =take care by herself, and like, it's a XX to make them feel better (Inform-Instructional focus- Text) ( Inform-Instructional focus-Interpretation)

Ms. Hen: Umm. Now, Michael (U raised his hand) (Inform-Classroom Logistics)

Michael: N::o. There's just n::o. 如果我是薇薇, 就不會出國留學，因為我會 (3.0) 呃...賺錢，嗯 (2.0) until my parents (.) feel better (Inform-Instructional focus- Text) ( Inform-Instructional focus- Evaluation)

Ms. Hen: OK. Emily (Inform-Classroom Logistic)
Emily: I will say, I 'll stay but I wouldn't fly to the big university in France yet until like (Inform-Instructional focus-Text) (Inform-Instructional focus-Evaluation) I (.) like find a job near home to get more experience and then take care of my parents and then earn enough money for a maid or something and like while I feel like confident and they're gonna to be ok (Inform-Instructional focus-Text) ( (Inform-Instructional focus- Text) ( Inform-Instructional focus- Description). Then I will leave (Inform-Instructional focus-Text) ( Inform-Instructional focus- Description).
Ms. Hen: OK. (nod to Emily)
Michael: Actually, which is making sense (Inform-Instructional focus-Text) ( Inform-Instructional focus-Evaluation). There's no reason why you can't go to the cooking school in Shanghai (Inform-Instructional focus-Text) (Inform-Instructional focus-Interpretation)
Ms. Hen: Victoria (Inform-Classroom Logistic)
Victoria: Umm. I would stay (Inform-Instructional focus-Text) ( Inform-Instructional focus-Evaluation). Because (.) She's still young so you have lots of opportunities to go there to go to France (Inform-Instructional focus-Text) ( Inform-Instructional focus-Interpretation). But you don't have too much time to be with your mom and dad (Inform-Instructional focus-Text) ( Inform-Instructional focus-Interpretation).
Larry: But what, what she [only] (raise his hand) (Direct)
Ms. Hen: [You know] when I hear you said, you would go and you will get scholarship and you will get money and pay somebody to take care of your parents (Inform-Instructional focus-Previous classroom discussions) (Inform-Instructional focus-Description). I feel crime (Inform-Instructional focus-Previous classroom discussions) ( Inform-Instructional focus-Evaluation). Because have you thought about, if you go and then die, they die, they couldn't wait till you come back (Inform-Instructional focus-Previous classroom discussions) ( Inform-Instructional focus-Interpretation). They couldn't wait till you make money for them (Response-Restatement) (Transcript-Story 3-October, 2010)


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